

FINAL  
ENVIRONMENTAL ASSESSMENT  
FOR  
PROPOSED CONSTRUCTION PROJECTS  
FOR THE 140TH WING,  
COLORADO AIR NATIONAL GUARD  
BUCKLEY AIR FORCE BASE, COLORADO



Prepared for  
Colorado Air National Guard  
by  
Air National Guard Readiness Center  
Civil Engineering Division

Andrews Air Force Base, Maryland

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**COVER SHEET**  
**FINAL ENVIRONMENTAL ASSESSMENT**  
**OF**  
**PROPOSED CONSTRUCTION PROJECTS FOR THE 140<sup>TH</sup> WING,**  
**COLORADO AIR NATIONAL GUARD**  
**AT BUCKLEY AIR FORCE BASE, COLORADO**

- a. Responsible Agency: Colorado Air National Guard
- b. Proposed Action: Construction, demolition, modification and operation of facilities for the Colorado Air National Guard at Buckley Air Force Base, Arapahoe County, Colorado.
- c. Designation: Final Environmental Assessment
- d. Abstract: The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) has initiated a construction planning program at Buckley Air Force Base, Colorado. Implementing the Proposed Action would involve modification, construction, relocation, demolition, and operation of select structures on the base to accommodate the mission assigned to the 140 WG and Buckley Air Force Base. The Proposed Action is comprised of the following eight facility elements: Civil Engineering (CE) Complex; Alert Shelters and Alert Crew Quarters; High-Speed Taxiway and Warm-Up/Holding Pad; Fire Training Crash Rescue Facility; Weapons Load Training Complex; Weapons Release Complex; East Parking Apron; and Approach Lighting for Runway 14. The Proposed Action is required for the successful completion of the alert mission for Buckley Air Force Base.

This Environmental Assessment (EA) evaluates the potential environmental impacts from implementing the Proposed Action. The EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. Under the No Action Alternative, no construction, modification, relocation, demolition, or operation of elements of the Proposed Action would occur.

The environmental resources evaluated for the Proposed Action include: air quality, land use, transportation, biological resources, cultural resources, environmental justice, socioeconomics, geology, soils and topography, water resources, solid and hazardous materials and waste, noise, ordnance, utilities, safety and pollution prevention.

Comment period ended on June 12, 2004.

- e. Privacy Statement: Any personal information provided will be used only to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

**FINAL**  
**FINDING OF NO SIGNIFICANT IMPACT**  
**CONSTRUCTION PROJECTS**  
**COLORADO AIR NATIONAL GUARD**  
**BUCKLEY AIR FORCE BASE, COLORADO**

**AGENCY:** Colorado Air National Guard, 140th Wing.

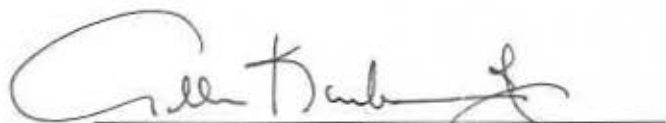
**BACKGROUND:** Pursuant to the National Environmental Policy Act, the Council on Environmental Quality regulations implementing the Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense Directive 6050.1, Regulation 5000.2-R, and Air Force Instruction 32-7061, The Environmental Impact Analysis Process as promulgated in 32 CFR Part 989, and other applicable federal regulations, the Air National Guard Readiness Center conducted an assessment of the potential environmental consequences of the Proposed Action and the No Action Alternative. The Proposed Action is to provide modification, construction, relocation, demolition, and operation of select structures on the base to accommodate the mission assigned to the 140th Wing and Buckley Air Force Base. The Environmental Assessment (EA) for Proposed Construction Projects for the 140th Wing, dated July 2004 is incorporated by reference.

**PROPOSED ACTION:** The 140th Wing of the Colorado Air National Guard proposes to construct, modify, relocate, demolish, and operate select structures on the Buckley Air Force Base to accommodate the mission assigned to the 140th Wing and Buckley Air Force Base. The July 2004 EA addresses eight separate projects with anticipated construction between Fiscal Year (FY) 04 and FY13.

**FACTORS CONSIDERED IN DETERMINING THAT NO ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED:** The EA analyzed the environmental impacts of alternatives to the Proposed Action taking into account all relevant environmental resource areas and conditions. The Air National Guard has examined the following resource areas and conditions and found that the Proposed Action would either have no, or inconsequential impact on: air quality, land use, transportation, biological resources, cultural resources, environmental justice, socioeconomics, geology, soils and topography, water resources, solid and hazardous materials and waste, noise, ordnance, utilities, safety and pollution prevention.

**PUBLIC NOTICE:** The National Environmental Policy Act, the Council on Environmental Quality regulations, and the U.S. Air National Guard Environmental Impact Analysis Process require public review of the EA prior to a Finding of No Significant Impact (FONSI) approval and implementation of the Proposed Action. The public had 30 days to review and submit comments on the EA. The public comment period ended on 12 June 2004. The comments and concerns submitted by the public are incorporated into the analysis of potential environmental impacts as part of the EA.

**FINDING OF NO SIGNIFICANT IMPACT:** Based on the requirements of the National Environmental Policy Act, the Council on Environmental Quality, and CFR Part 989, I conclude that the environmental effects of the Proposed Actions regarding the Civil Engineering Complex (EA paragraph 2.1.1), Alert Shelters and Alert Crew Quarters (paragraph 2.1.2) and Approach Lighting for Runway 14 (paragraph 2.1.8) are not significant, and therefore, an Environmental Impact Statement will not be prepared. An availability notice for public review was published in the Denver Post and the Rocky Mountain News newspaper, Denver, Colorado, on 14 May 2004 for a 30-day review period. Copies of the Draft EA and Draft FONSI were provided to public agencies for review and comment. Hard copies of the Draft EA and Draft FONSI were placed in the Aurora Public Library, Aurora, Colorado and the Denver Public Library, Denver, Colorado for dissemination. The signing of this FONSI completes the Air National Guard's Impact Analysis Process with respect to these three projects. A decision will be made on the remaining projects as we approach their anticipated construction dates.



ALLEN KIRKMAN, JR., Colonel, USAF  
Commander

11 August 2004

Date

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# 1.0 Purpose and Need for the Proposed Action

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## 1.1 Introduction

The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) has initiated a construction planning program at Buckley Air Force Base (BAFB), Colorado. Implementing the Proposed Action would involve modification, construction, relocation, demolition, and operation of select structures on the base to accommodate the mission assigned to the 140 WG and BAFB. The Proposed Action is comprised of the following eight facility elements, described further in Sections 1.2 and 2.1:

1. Civil Engineering (CE) Complex
2. Alert Shelters and Alert Crew Quarters
3. High-Speed Taxiway and Warm-Up/Holding Pad
4. Fire Training Crash Rescue Facility
5. Weapons Load Training Complex
6. Weapons Release Complex
7. East Parking Apron
8. Approach Lighting for Runway 14

## 1.2 Purpose and Need

The Colorado ANG operates and maintains the airfield located on BAFB. The airfield supports the training of the 120th Fighter Squadron, deployment needs of the 140 WG, the U.S. Army National Guard, Reserves, Active Duty Units in the region, and Department of Defense (DoD) assigned assets in the region in support of contingency operations, as well as training of the Colorado Army Guard Aviation units. Additional activities at BAFB include development of space and missile systems, satellite tracking, data reception, and early warning radar.

On October 1, 2000, the former Buckley ANG Base became 821<sup>st</sup> Support Squadron and became the active host of the base. On October 1, 2001, the base was hosted by the 460th Air Base Wing (460 ABW) which is still in place today. This has shifted the mission of the base, which is now home to diverse missions, military services and components. These include active-duty, National Guard, and Reserve personnel from the Air Force, Army, Navy, and Marine Corps to accomplish satellite support operations, fighter operations, installation support, and other important missions. The challenge is to develop the installation to meet the diverse facility requirements of these disparate organizations while maintaining the look and feel of a singular, well-planned military installation integrated into its natural environment—one that would represent the military well as the only remaining active military installation in the Denver metropolitan area.

To meet this mission, numerous new facilities are being planned, designed, and constructed on BAFB (2002a). Future facilities are sited and would be designed to do the following:

- Provide work environments and build a sense of community or designs that are in concert with facilities excellence plan.
- Consolidate interdependent functions and campus-like settings.
- Co-locate compatible functions.
- Encourage pedestrian traffic.
- Provide a safe, secure community by conforming to force protection criteria and facilitating citizen surveillance.
- Conform to sustainable construction principles.
- Minimize energy consumption.
- Protect the environment.
- Adapt to local climatic conditions by protecting entryways from prevailing winds and taking advantage of solar energy to keep entryways, pedestrian walkways, and service areas free of winter snow and ice.
- Preserve open areas as buffers, and respite/recreation areas.
- Provide public spaces that promote a socially connected community.
- Take advantage of mountain vistas.
- Incorporate aesthetically pleasing landscaping appropriate for the semiarid climate by using native, drought-resistant vegetation highlighted with judicious use of turf grass.

The Proposed Action would comply with the siting and design criteria described above, and would improve flight operations and readiness, as well as improve facilities and training opportunities for the active Air Force, Reserves, and Air National Guard. These new facilities would meet current Air Force and Air National Guard operations, safety, and design standards while reducing inefficiencies. Each element of the Proposed Action has the following purpose and need:

1. **Civil Engineering (CE) Complex.** The current active duty host, the 460 ABW, has required the use of the existing CE complex, which is also being used by the 140 WG. Space is insufficient for administration, training, storage, or shop for both units to meet the new mission requirements. In accordance with Air Force Instruction 32-1012, paragraph 1.2, the active duty host must provide a properly sized and configured replacement CE facility for the ANG Civil Engineer work force to work and train.
2. **Alert Shelters and Alert Crew Quarters.** The existing alert shelters, comprised of six hangars (Buildings 912 through 917), would be modified to include a fire suppression system. This system would ensure that alert status aircraft and crew members are provided protection in the event of a fuel spill, fire or accident. A new alert crew quarters facility would be constructed to provide fighter aircraft mission control and

planning and aircrew billets. The existing alert crew quarters, mobile homes that were set up in 2001-2002, would be removed.

3. **High-Speed Taxiway and Warm-Up/Holding Pad.** A high-speed parallel taxiway west of Runway 14/32 would be constructed to taxi assigned and transient aircraft between the south end of Runway 14/32 and the main parking apron. Additionally, this taxiway would provide faster access for fire response actions. A warm-up/holding pad would be required for assigned F-16 aircraft to be pre-flight checked and safed and post-flight safed. Properly configured and located airfield pavement systems are critical to maintaining high operational status for the assigned F-16 training and missions and to support various aircraft utilizing Runway 14/32. Taxiways provide primary access/egress to Runway 14/32 from the main ramp. The current Taxiways F, W, C, and B located on the east side of the runway are within the runway lateral clearance zone of 1,000 linear feet and thus do not provide adequate width for transient aircraft. Additionally, assigned and transient aircraft are required to taxi back across the main runway from the east to the west side of the field. Current taxiway pavements were originally constructed prior to 1960. Also of concern is that vehicle and aircraft traffic pick up deteriorated sealant and asphalt debris.
4. **Fire Training/Crash Rescue Facility.** A properly sized, configured, and sited fire training/crash rescue facility for training and crash rescue response would be constructed to provide quick response to aircraft emergencies, and fire crash rescue training of ANG-assigned fire fighting crews in support of assigned 140 WG aircraft and missions.
5. **Weapons Load Training Complex.** The existing weapons load training complex (Building 805) would be modified by adding a classroom and four offices on the north side of the building, and utilizing Building 917 for actual training on an aircraft. This modification to the facility would provide aircraft loading crews with training experience essential to meet F-16 mission requirements. The facility would provide training staff with a centralized location for personnel evaluations, certifications, and hands-on training for lead crews and loading crew members.
6. **Weapons Release Complex.** The existing weapons release complex is performing mission operations at 64 percent of the authorized space, and the shortage in operational space has limited the functions performed by assigned personnel. In order to address limitations of the weapons release complex, the southern portion of Building 805 would be expanded to provide additional operational space that would alleviate equipment shortage concerns and shortfalls of aircraft release and weapon systems, and also ensure that F-16 weapons release operations met facility requirements. Storage of items from Buildings 1011 and 909 would also be provided.
7. **East Parking Apron.** A new aircraft parking apron would be constructed to support transient aircraft arriving on BAFB to transport vital DoD assets. The apron would also support deployment of DoD assigned assets in the region in support of contingency operations. The apron would be sized to support C-5, C-17, and C-130 military airlift aircraft or various aircraft contracted to transport equipment and personnel to maintain high operational status of Air Force Space Command (AFSPC) space-launched assets

and deployment of DoD personnel and equipment in the region to areas of contingency operations.

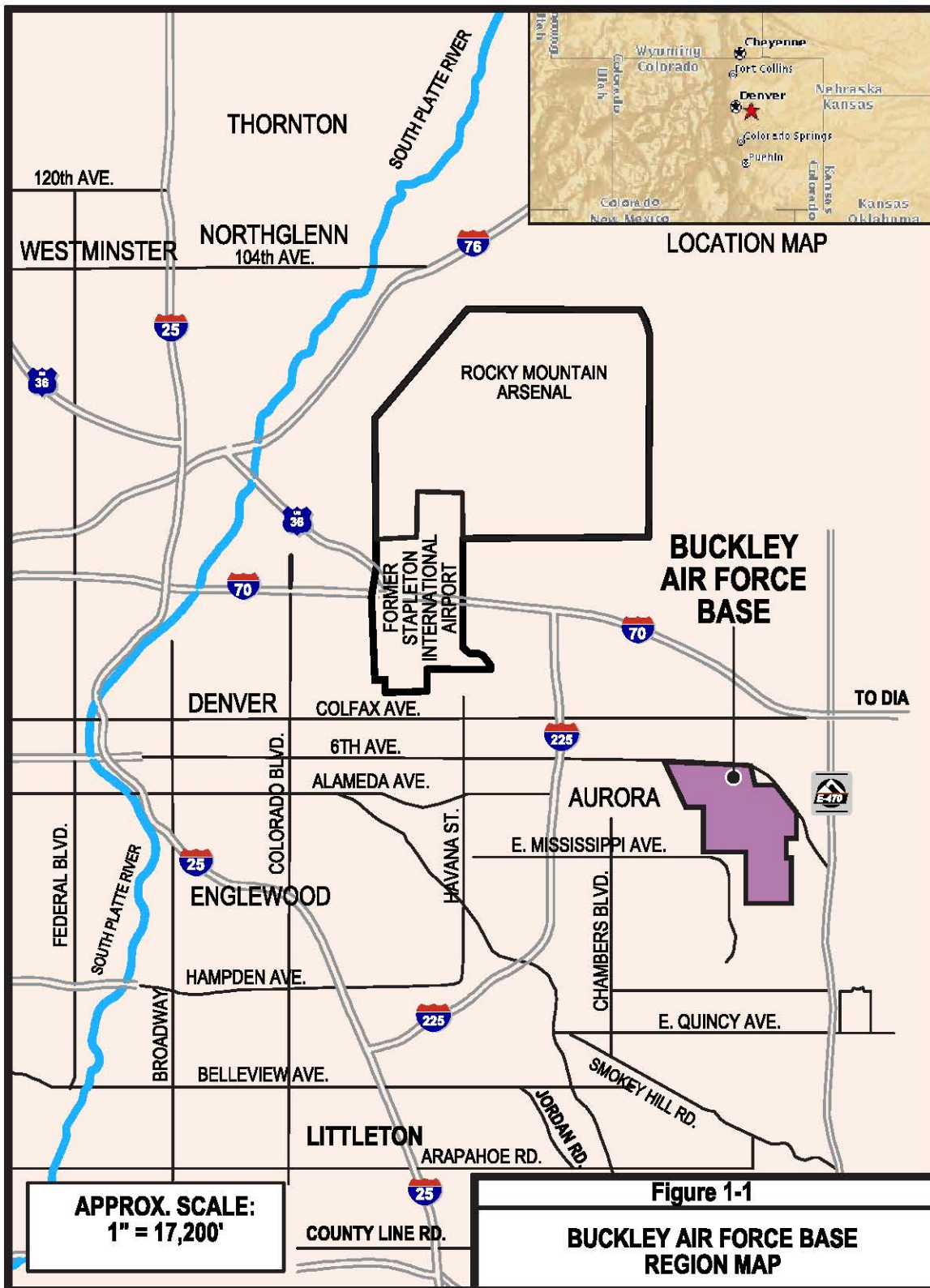
8. **Approach Lighting for Runway 14.** Approach lighting would be constructed for Runway 14, a Precision Instrument Approach Runway located on the north end of Runway 14/32. During limited visibility, landing patterns are limited to Runway 32, which has approach lighting on the south end of Runway 14/32. This pattern conflicts with Denver International Airport landing patterns for their south approach, increases air traffic congestion, and increases risk for flight operations. Runway 14 minimums are high because of the lack of approach lighting, resulting in in-flight emergencies that require barrier engagements being forced to use Runway 32.

## 1.3 Location

BAFB is located in Arapahoe County, Colorado, on the eastern edge of the City of Aurora, approximately 5 miles east of Denver and 10 miles southwest of Denver International Airport. Figure 1-1 shows a site vicinity map of BAFB.

## 1.4 Scope of the Environmental Review

This environmental analysis is being conducted in accordance with 32 Code of Federal Regulations (CFR) Section 989, which, in turn, implements Section 102(2) of the National Environmental Policy Act (NEPA) and regulations established by the Council on Environmental Quality (CEQ). These regulations specify that an Environmental Assessment (EA) be prepared to determine whether preparation of an Environmental Impact Statement (EIS) is required, or a Finding of No Significant Impact (FONSI). To comply with NEPA and other relevant environmental requirements and to assess potential impacts on the environment, the decision-making process for the Proposed Action includes the development of an EA addressing environmental issues.



## 2.0 Description of Proposed Action and Alternatives

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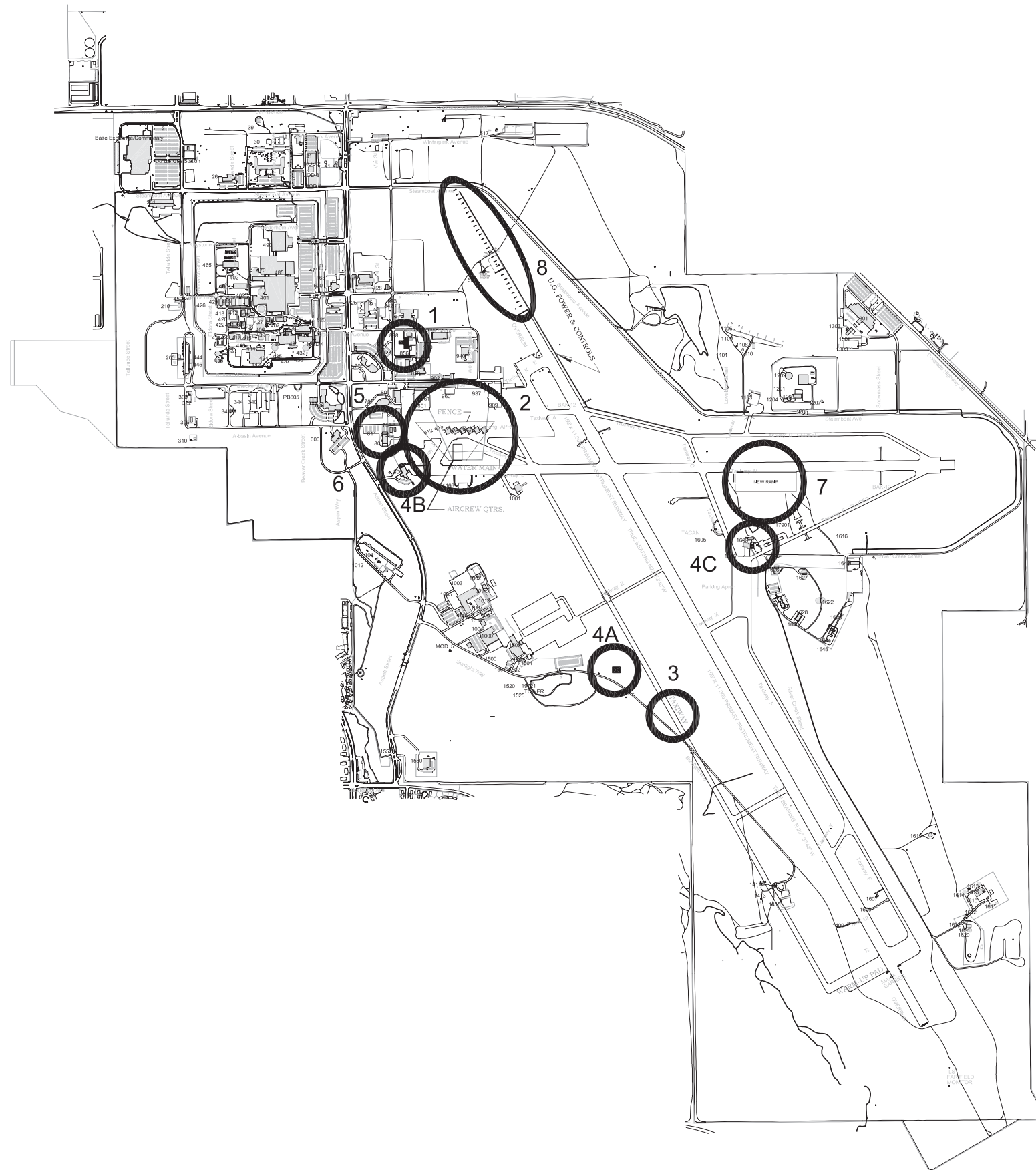
Implementation of the Proposed Action would improve the operational efficiency and execution of the mission of the 140 WG at BAFB. Most elements of the Proposed Action are independent of the other elements, but would be addressed collectively in the EA because of the commonality of the timing and use by the 140 WG.

### 2.1 Proposed Action

The Proposed Action consists of nine elements of the proposed alert mission construction and demolition program for the 140 WG. Figure 2-1 shows the locations of the Proposed Action elements. The Proposed Action elements, summarized below, are required for the successful completion of the alert mission.

#### Proposed Action Elements

1. Civil Engineering (CE) Complex
  - a. Relocation of the existing Airman's Attic, a prefabricated building
  - b. Relocation of the 140 WG Gas Cylinder Storage area and demolition of the original foundation
  - c. Demolition of a portion of the existing parking lot
  - d. Modification of the existing storm water conveyance system to accommodate the new construction
  - e. Construction and operation of the CE complex and new parking lot
2. Alert Crew Quarters and Alert Shelters
  - a. Addition of a fire suppression system, including a foam house, to the existing alert shelters
  - b. Construction and operation of alert crew quarters and a parking lot
  - c. Construction of controlled access through fencing and/or an individual deployment system (IDS) perimeter around the complex
  - d. Demolition of existing alert crew quarters
3. High-Speed Taxiway and Warm-Up/Holding Pad
  - a. Demolition of a portion of existing Sunlight Way Road
  - b. Demolition of Taxiways F, W, X, and Y
  - c. Construction and operation of a new taxiway (75 by 10,500 linear feet) and holding pads (225 by 400 linear feet)



## PROPOSED ACTION LEGEND

ELEMENT NUMBER	ELEMENT DESCRIPTION
1	ENGINEERING (CE) COMPLEX
2	ALERT SHELTERS AND ALERT CREW QUARTERS
3	HIGH-SPEED TAXIWAY AND WARM UP/HOLDING PAD
4	FIRE TRAINING CRASH RESCUE FACILITY
	OPTION A -- CONSTRUCTION AND OPERATION OF A NEW FIRE TRAINING/CRASH RESCUE FACILITY
	OPTION B -- ADDITION TO THE EXISTING COMMUNITY FIRE STATION (BUILDING 806)
	OPTION C -- MODIFICATION OF THE EXISTING FIRE CRASH RESCUE FACILITY (BUILDING 1606)
5	WEAPONS LOAD TRAINING COMPLEX
6	WEAPONS RELEASE COMPLEX
7	EAST PARKING APRON
8	APPROACH LIGHTING FOR RUNWAY 14

FIGURE 2-1  
PROPOSED ACTION LOCATIONS,  
140TH WING COLORADO AIR NATIONAL GUARD,  
BUCKLEY AIR FORCE BASE





4. Fire Training/Crash Rescue Facility

*Option A.* Construction and operation of a new fire training/crash rescue facility if Element 3 is approved and response time cannot be met from Building 806 to the south runway overrun.

- a. Construction and operation of a fire training/crash rescue facility next to the new control tower location
- b. Construction of a new parking lot
- c. Construction of access roads from the fire crash house to the new high-speed taxiway and runway

*Option B.* Addition to the existing community fire station (Building 806) if Element 3 is approved.

- a. Expansion of the existing fire station to include additional bays and a classroom for training and crash rescue operations
- b. Expansion of the existing parking lot

*Option C.* Modification of the existing fire crash rescue facility (Building 1606) if Element 3 is not approved.

- a. Construction of bays and a classroom for training and crash rescue operations
- b. Expansion of the existing parking lot

5. Weapons Load Training Complex

- a. Expansion of the north end of Building 805 for a classroom
- b. Demolition of a portion of the existing parking lot for the building expansion, and construction of a same-sized parking lot

6. Weapons Release Complex

- a. Expansion of the south end of Building 805 for overhaul and repair of aircraft release and weapon systems

7. East Parking Apron

- a. Construction and operation of the east parking apron to include an air craft deicing area and collection system
- b. Demolition of the existing parking apron, the current deicing system, and Taxiway E

8. Approach Lighting for Runway 14

- a. Construction and operation of approach lighting for Runway 14

A detailed description of each of the Proposed Action elements is provided in the following subsections.

### 2.1.1 Civil Engineering Complex

A new CE Complex would be constructed and operated at a conveniently located site (see Figure 2-1). The complex would consist of an approximate 41,000-square-foot, steel-frame structure with reinforced-concrete foundation and floor slab, masonry veneer with exterior insulation and finish system accents, and standing-seam metal roof. The base architectural style would match existing facilities.

Construction of the CE complex would require relocation of the existing Airman's Attic (Building 856), a prefabricated building; demolition of a portion of the existing parking lot and construction of a new parking lot and landscaping; relocation of the 140 WG Gas Cylinder Storage area and demolition of the original foundation; modification of the existing storm water conveyance system to accommodate the new construction; a fire protection system; and connections for utilities and communications.

### 2.1.2 Alert Shelters and Alert Crew Quarters

**Alert Shelters.** The existing alert shelters comprised of six buildings numbering from 912 through 917, would be modified to include a fire suppression system that would ensure that alert status aircraft and crew members are provided protection in the event of a fuel spill, fire, or accident. The fire suppression system would consist of a closed-head deluge design with a dedicated water supply, piping, pump system, and 194-degree rate-compensated heat detectors. The system would also provide a high expansion foam design with an oscillating monitor from a centralized foam house or individual storage tanks in each hangar. Site support required for the fire suppression system would include construction of a foam house and associated piping, extension of a dedicated base water line, two low-profile water hydrants, electrical hardware and power capabilities to meet security operations, boring operations to deliver communication and electrical conduit for site support, communication conduit for a closed circuit television (CCTV) surveillance system and security requirements at Buildings 912 and 917. Installation of an additional spare generator for the site and an additional back-up generator for Buildings 916 and 917 operations with advanced technical support (ATS) located with existing emergency generators onsite would also be required.

**Alert Crew Quarters.** A new alert crew quarters facility would be constructed to provide fighter aircraft mission control and planning and aircrew billets. This facility would consist of an approximate 6,500-square-foot, reinforced-concrete foundation, concrete walls with sound proofing, a metal standing seam roof, and a secure area. Additional components of this facility would include a parking lot, a controlled-access fenced perimeter and/or an intrusion detection system with an approximate 300-square-foot entry control facility, an approximate 50-square-foot entry control point building and gates, back-up emergency power for the complex, and utilities infrastructure to meet operational and support requirements. The crew quarters must be located to ensure that aircrews meet prescribed response limits.

### 2.1.3 High-Speed Taxiway and Warm-Up/Holding Pad

A high-speed parallel taxiway west of Runway 14/32 would be constructed to taxi assigned and transient aircraft between the south end of Runway 14/32 and the main parking apron. Additionally, this taxiway would provide faster access for fire response actions. A warm-

up/holding pad is required for assigned F-16 aircraft to be pre-flight checked and safed and post-flight safed. Properly configured and located airfield pavement systems are critical to maintain high operational status for the assigned F-16 training and air sovereignty alert (ASA) missions and to support various aircraft utilizing Runway 14/32. Taxiways provide primary access/egress to Runway 14/32 from the main ramp.

The current Taxiways F, W, C, and B located on the east side of the runway are within the runway lateral clearance zone of 1,000 linear feet and thus do not provide adequate width for transient aircraft. Additionally, assigned and transient aircraft are required to taxi back across the main runway from the east side of the field to the west side of the field. Current taxiway pavements were originally constructed prior to 1960. Also of concern is that vehicle and aircraft traffic picks up deteriorated sealant and asphalt debris.

Actions required for construction of the taxiway and warm-up/holding pad include demolition of the following existing structures: the firing range; a portion of Sunlight Way Road; and Taxiways F, W, X, and Y. The new high-speed taxiway to be constructed and operated would measure 75 by 10,500 linear feet, and the new holding pad would be 225 by 400 linear feet. Supporting facilities to be constructed for the new taxiway and holding pad include lighting, signage, and taxiway markings.

#### **2.1.4 Fire Training/Crash Rescue Facility**

The fire training/crash rescue facility would provide space for equipment and vehicle bays, an alarm room, sleeping quarters/dining areas for use as a crash house during the week, recreation, administrative areas, equipment maintenance and storage, and facilities to maintain physical fitness. The facility would be sized and located to support and assure training of assigned ANG fire fighters and full-time crash response to Runway 14/32 and associated aprons and taxiways. The facility is required to meet training requirements and crash response capability of assigned ANG fire fighters and support of around-the-clock flight operations on BAFB.

Currently, the ANG fire fighters work from limited space in the existing community fire station (Building 806). An undersized fire crash house (Building 1606) exists on BAFB, but it is not capable of supporting ANG fire fighter training needs or crash rescue requirements. The existing facility was constructed in 1954 and can no longer be sustained. Currently, the ability to train ANG assigned fire fighters is limited because of the lack of adequate space. Response time to the south end of Runway 14/32 is hampered by the existing crash rescue facility location. The future loss of the taxiway and ramp system on the east side of the airfield would further increase response time.

**Option A.** Locating the fire training/crash rescue facility at the control tower would be required if the high-speed taxiway is constructed and it is determined that the response time from the existing fire crash/rescue facility (Building 806) cannot be met. This option would also include construction of a parking lot and access roads to the high-speed taxiway and Runway 14/32. The fire training/crash rescue facility at any of the three location options would be constructed of reinforced-concrete foundations and floor slabs, concrete walls with sound proofing, a metal standing-seam roof, and an apparatus bay. The facility would measure 10,700 square feet. Supporting infrastructure to be constructed would include

emergency backup power, utilities and communication support, privately owned vehicles (POV) and crash rescue equipment parking and pavements, and security improvements.

**Option B.** If the new high-speed taxiway (see Section 2.1.3) is constructed, the existing community fire station (Building 806) would be expanded to include additional bays and a classroom. This option would be dependent on the adequacy of crash response times from Building 806 to the new taxiway. Response times from Building 1606 would not be adequate. The existing parking lot would also be expanded.

**Option C.** If the new high-speed taxiway is not built, the existing fire crash rescue facility (Building 1606) would be upgraded to a fire training/crash rescue facility that would include bays, a classroom, and a larger parking lot. Response times to the existing taxiway should be adequate from this location.

### 2.1.5 Weapons Load Training Complex

The existing weapons load training complex (Building 805) would be modified by adding a classroom and four offices on the north side of the building, and utilizing Building 917 for actual training on an aircraft. This modification to the facility would provide aircraft loading crews training experience essential to meet F-16 mission requirements. The facility would provide training staff with a centralized location for personnel evaluations, certifications, and hands-on training for lead crews and loading crew members. The complex would accommodate one assigned F-16 aircraft, numerous weapons load pallets, load crew equipment, a personnel area, and sufficient work space to maneuver safely and efficiently around aircraft during loading operations.

The approximate 1,000-square-foot addition to the weapons load training complex would be constructed with masonry walls, a concrete floor slab, and built-up roof. Supporting infrastructure would include a fire suppression system, utilities, and mechanical, electrical and communication systems. Existing parking pavement (approximately 1,000 square feet) to be demolished for construction of the new complex would be replaced with the same amount of new parking area.

### 2.1.6 Weapons Release Complex

The existing weapons release complex (Building 805) would be modified by adding space to the south side of building for overhaul and repair of aircraft release and weapon systems including bomb racks, weapons pylons, ejection racks, a bench stock room, a storage room, a mobility equipment room, and a unit cleaning room. The existing weapons release complex is performing mission operations at 64 percent of the authorized space, and the shortage in operational space has limited the functions performed by assigned personnel. In order to address limitations of the weapons release complex, the southern portion of Building 805 would be expanded to provide additional operational space that would alleviate equipment shortage concerns and shortfalls of aircraft release and weapon systems, and ensure that F-16 weapons release operations met facility requirements. Storage of items from Buildings 1011 and 909 would also be provided.

The weapons release complex addition would measure approximately 5,000 square feet depending on the facility functionality review at the time of design. The facility addition would be constructed with masonry walls, a concrete floor slab, and a built-up roof.

Supporting infrastructure would include a fire suppression system; utilities; and mechanical, electrical, and communication systems. New pavement would be required to provide vehicle and equipment access/circulation to the building addition. No new parking pavement would be required.

### **2.1.7 East Parking Apron**

A new aircraft parking apron would be constructed to support transient aircraft arriving on BAFB to transport vital DoD assets. The apron would also support deployment of DoD-assigned assets in the region in support of contingency operations. The apron would be sized to support C-5, C-17, and C-130 military airlift aircraft, or various aircraft contracted to transport equipment and personnel to maintain high operational status of AFSPC space launched assets and deployment of DoD personnel and equipment in the region to areas of contingency operations.

The current apron located on the east side of the runway is within the 1,000-linear-foot runway lateral clearance zone. The existing edge of ramp and ramp lighting are inadequate to support 24-hour operations. An existing deicing system is functional, but has limited capacity. An additional concern is that vehicle and aircraft traffic picks up deteriorated sealant and asphalt debris from deteriorating pavement.

The new parking apron would measure approximately 360,600 square feet and be constructed adjacent to Taxiway M. Supporting infrastructure to be constructed would include a storm water drainage system, an aircraft deicing fluid collection system, fire hydrants, ramp edge and overhead lighting, signage, markings, and support taxiways. Additionally, the demolition of the existing east apron, the current deicing system, and Taxiway E would be required.

### **2.1.8 Approach Lighting for Runway 14**

A Simplified Short Approach Lighting System with Runway Alignment Indicator Lights (SSLAR) would be constructed for Runway 14, located on the north end of Runway 14/32. During limited visibility, landing patterns are limited to Runway 32 (the south end of Runway 14/32), which has an instrument landing system and an Approach Lighting System with Sequenced Flashing Lights (ALSF-1). This pattern conflicts with Denver International Airport landing patterns for their south approach, increases air traffic congestion, and increases risk for flight operations. Runway 14 minimums are high because of the lack of approach lighting, resulting in in-flight emergencies that require barrier engagements being forced to use Runway 32.

The approach lighting would be constructed along the extended Runway 14 centerline, starting at the threshold and ending 2,800 feet to the north. Flush-mounted in-pavement fixtures would be installed in the 1,000-foot paved overrun. Beyond the overrun, the elevated light bars would consist of fixtures mounted on frangible masts with the heights of the lights ranging from 14 to 70 inches above ground. The foundations for these fixtures would be 10.5 feet by 20.5 feet. The final two light bars would be mounted on low-impact resistant fiberglass towers with a 7-foot by 10-foot concrete foundation. The heights of these last two bars would be 8.75 inches and 13 feet. The approach lighting system would also

include a concrete-encased duct bank, support structures, cabling, regulator, and lighting controls. Light structures would be spaced 200 feet apart.

The construction schedule for the Proposed Action elements would be spaced over the next several fiscal years, as shown in Table 2-1.

**TABLE 2-1**  
Construction Schedule for Proposed Action Elements

Element	FY 04	FY 06	FY08	FY09	FY10	FY11	FY13
1 CE Complex	X						
2 Alert Facility		X					
3 High-Speed Taxiway/Arm Disarm Pad				X			
4 Fire Training/Crash Rescue Facility					X		
5 Weapons Load Training Complex						X	
6 Weapons Release Complex							X
7 East Parking Apron					X		
8 Approach Lighting for Runway 14	X						

Source: COANG 2003  
FY = fiscal year

## 2.2 Alternatives

### 2.2.1 Alternatives Considered but not Carried Forward for Analysis

In order to meet the requirements of the 140 WG to implement its mission duties, an evaluation was conducted to identify feasible alternatives to the Proposed Action. The alternatives described below were evaluated for each element of the Proposed Action.

**Construction of a CE Complex.** Reasonable alternatives considered included expansion of the existing building, leasing off base, and modification of new construction for the 460 ABW. However, in comparison to the Proposed Action, implementation of these alternatives would result in reduced efficiency of the 140 WG to provide operations and maintenance support for base facilities. Therefore, these alternatives were not carried forward for analysis.

**Modification of Alert Shelters and Construction of Alert Crew Quarters.** Reasonable alternatives considered included three options for location of the alert shelters and crew quarters facilities. The selected option has the attributes of the shortest utility run, the least amount of required security fence, and closest distance to the aircraft. The remaining options were not carried forward for further analysis.

**Fire Training/Crash Rescue Facility.** The three options discussed in Section 2.1.4 would be carried forward for further analysis.

**Weapons Release and Weapons Load Training Complex.** One alternative considered for the weapons release and weapons load training complex was construction of a 9,600-square-foot facility east of Building 805 and south of the existing apron. This alternative was not carried forward because it did not fully utilize existing facility space and would be more costly than the preferred option.

**High-Speed Taxiway/Warm-Up Pad and East Parking Apron.** No alternative locations were identified that would meet the operational requirements and mission needs for these facilities.

**Approach Lighting Runway 14.** The alternative of utilizing Runway 32 during limited visibility was considered. This alternative was not carried forward because of unacceptable risk in flight operations.

### **2.2.2 Alternatives Carried Forward for Analysis**

Two alternatives were carried forward for analysis based on the results of the alternatives identification process: the Proposed Action (described in Section 2.1) and the No-Action Alternative.

#### **No-Action Alternative**

Under the No-Action Alternative, the Proposed Action elements would not be constructed. Without implementation of the Proposed Action, the efficiency and effectiveness of the 140 WG to conduct its mission duties, including flight operations, readiness, and training requirements, would not be improved. The environmental consequences of implementing the No-Action Alternative are identical to the consequences of maintaining the status quo (that is, no change in existing conditions).

## 3.0 Affected Environment

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### 3.1 Air Quality

#### 3.1.1 Meteorology

BAFB has a semi-arid climate that is characteristic of the high plains. It typically experiences low humidity, abundant sunshine, low precipitation, and large diurnal temperature fluctuations. The average annual temperature is 50.1 degrees Fahrenheit (°F). July is the hottest month with an average maximum temperature of 88.8 °F. The coolest month is January with an average minimum temperature of 15.5 °F. Precipitation fluctuates throughout the year with the wettest months occurring in spring and summer. The average annual precipitation is 16.3 inches. BAFB receives approximately 53 inches of snowfall per year. The prevailing winds in the local area are predominantly from the south and average 8.6 miles per hour (BANGB 1999a).

#### 3.1.2 Regional Air Quality

The Region of Influence (ROI) for air quality is the Denver metropolitan area. BAFB is located within the Metropolitan Denver Air Quality Control Region (AQCR) 36. The Denver Metropolitan area was previously designated by the U.S. Environmental Protection Agency (USEPA) as a serious non-attainment area for carbon monoxide (CO), a non-attainment area for the 1-hour ozone standard, and a moderate non-attainment area for particulate matter smaller than 10 microns (PM<sub>10</sub>). Recently, the USEPA redesignated the Denver metropolitan area as an attainment/maintenance area for the following criteria pollutants: ozone on 11 October 2001, CO on 14 January 2002, and PM<sub>10</sub> on 16 October 2002 (APCD 2002).

#### 3.1.3 BAFB Emissions

BAFB has been identified by the Colorado Air Pollution Control Division (APCD) as a major source of criteria pollutants and as a major Title V source subject to Title V Operating Permit No. 95OPAR118. This permit was issued on 28 August 1997, most recently reissued on 01 July 2002, and expires 30 June 2007 (BAFB 2003a). BAFB's Title V Operating Permit has established emission limits for nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) at 249.9 tons per year (tpy) and emission limits for CO, volatile organic compounds (VOCs), and PM<sub>10</sub> at 99.9 tpy. If BAFB adds new sources or modifies existing sources resulting in significant net emissions increase for any criteria pollutant listed in Colorado Regulation No. 3, Part A, Section I.B.58, Prevention of Significant Deterioration (PSD) permitting requirements may apply.

The stationary source inventory reports approximately 165 stationary combustion emission units, including natural gas-fired heating units, boilers, furnaces, roof heaters, hot water heaters, diesel engine driven electricity generators and natural gas-fired electricity generators.



Primary fuel storage at the base includes two 210,000-gallon JP-8 aboveground storage tanks (ASTs) and sixteen diesel ASTs ranging in size from 12,000 to 42,000 gallons. Additionally there are two gasoline ASTs (4,000 and 6,000 gallon) and three 12,000-gallon gasoline underground storage tanks (USTs). Abrasive paint removal is performed in the Corrosion Control Hangar (Building 800) using hand-held sanders. While mobile sources are not considered under the Clean Air Act (CAA) Title V operating permit or the Colorado operating permit program, they are significant components of total base emissions. Mobile sources include on- and off-road vehicles and equipment, aerospace ground equipment, and aircraft operations (BAFB 2004).

The area in which the base operates is designated as attainment maintenance for PM<sub>10</sub>. The base is a synthetic minor source (permit limits less than 100 tons per year) for the PM<sub>10</sub> emissions under the PSD provisions.

In July 2002, the Colorado Department of Public Health and Environment (CDPHE) inspected stationary source emission units and determined that BAFB was in compliance with its Title V permit. Toxic air pollutants are those pollutants listed by the CAA Amendments of 1990 that are hazardous to human health or the environment, but are not specifically covered under another part of the Act. The National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and Colorado State regulations regulate several toxic air pollutants including arsenic, asbestos, benzene, beryllium, mercury, and vinyl chloride. BAFB currently emits hazardous air pollutants during the course of base activities such as storing fuel, using paints, and running generators.

Based on a review of hazardous air pollutant (HAP) emissions, BAFB is not a major source of HAPs and is not subject to additional permitting requirements or maximum achievable control technology (MACT) standards. Actual criteria pollutant emissions for BAFB in calendar year 2002 are summarized in Table 3-1.

TABLE 3-1  
BAFB 2002 Criteria Pollutant Emissions

Emission Source	Criteria Pollutants						Total HAPs (tpy)
	CO (tpy)	NO <sub>x</sub> (tpy)	PM (tpy)	PM <sub>10</sub> (tpy)	So <sub>x</sub> (tpy)	VOC (tpy)	
Combustion Sources							
Natural Gas Boilers, Furnaces, Heaters <0.3MMBtu/hr	0.11	0.26	0.02	0.02	0.00	0.02	0.01
Natural Gas Boilers, Furnaces, Heaters 0.3 to 10 MMBtu/hr	2.78	3.30	0.25	0.25	0.02	0.18	0.06
Natural Gas Boilers, Furnaces, Heaters with Diesel Backup	2.13	2.53	---	0.19	0.02	0.14	0.05
Natural Gas Generators	0.07	0.04	---	0.00	0.00	0.00	0.00
Diesel Generators <600 hp	0.27	1.26	0.09	0.09	0.08	0.10	0.00
Diesel Generators >600 hp	16.63	72.56	---	1.22	1.22	2.14	0.09

TABLE 3-1  
BAFB 2002 Criteria Pollutant Emissions

Emission Source	Criteria Pollutants						Total HAPs (tpy)
	CO (tpy)	NO <sub>x</sub> (tpy)	PM (tpy)	PM <sub>10</sub> (tpy)	SO <sub>x</sub> (tpy)	VOC (tpy)	
Arresting Barriers	0.87	0.02	0.00	0.00	0.00	0.04	0.00
Engine Test Cell (Hush House)	1.30	1.28	0.03	0.03	0.04	0.72	0.01
Fuel Storage and Transfer							
Fuel Storage Tanks	---	---	---	---	---	0.77	0.06
Fuel Transfer Losses	---	---	---	---	---	0.23	0.01
AAFES USTs	---	---	---	---	---	2.29	0.02
Operational Sources							
EMIS Database Chemical Usage	---	---	---	---	---	0.75	1.08
Paint Usage	---	---	---	---	---	0.53	0.09
Degreasers	---	---	---	---	---	0.09	0.00
Fuel Cell Maintenance	---	---	---	---	---	0.06	0.00
Small Arms Firing	0.07	---	---	---	---	---	0.00
Welding	---	---	0.01	0.01	---	---	0.00
Woodworking	---	---	0.15	0.15	---	---	---
Fugitive Particulates							
Construction Projects	---	---	38.80	17.46	---	---	---
Cooling Towers	---	---	0.14	0.14	---	---	---
Rock Crusher	---	---	0.06	0.06	---	---	---
Dust from Road Travel	---	---	106.85	26.42	---	---	---
Total Fugitive (tpy) *			145.65	43.88			
Total Stationary Sources (tpy)	24.23	81.27	0.75	2.15	1.39	5.77	1.46

--- Insignificant emissions

CO = Carbon monoxide

NO<sub>x</sub> = Nitrogen oxides

PM = Particulate matter

PM<sub>10</sub> = Particulate matter less than 10 microns

SO<sub>x</sub> = Sulfur oxides

VOC = volatile organic compounds

HAP = hazardous air pollutant

tpy = tons per year

MMBtu/hr = million British thermal units per hour

hp = Horsepower

\* Construction project and dust from road travel only

## 3.2 Land Use

### 3.2.1 Regional Land Use

The ROI for land use is BAFB and the adjacent lands. BAFB is located adjacent to the City of Aurora, approximately 8 miles east of the Denver/Aurora corporate boundaries in Arapahoe County. As such, BAFB is part of an inner suburb of a larger city. Accordingly, the area has a suburban character with motor vehicles providing the principal means of transportation and influencing the design of the roadways, land uses, site layouts, and building designs. BAFB is bounded on the northeast by Colorado State Route 30 (6th Avenue), directly east and south by privately held real estate and the Plains Conservation Center, and on the southwest/west by residential development and undeveloped land owned by the City of Aurora and the State of Colorado (Tower Road, Buckley Road). An airfield has been active at BAFB since the early 1940s.

The land uses along the northern boundary of BAFB are largely industrial; however, a significant amount of open space and grassland conservation areas exist. To the east, the land is largely unimproved with a scattered commercial and industrial character. To the south, the land is less developed, with a conservation area. To the west, the land uses are generally commercial along the primary and arterial streets and residential on the secondary streets. The City of Aurora is rapidly growing from west to east, and its development is expected to continue its progression from around BAFB toward the less developed areas to the east. Two significant factors account for this growth: the opening of the new Denver International Airport, 10 miles northeast of BAFB, and development along the E-470 Bypass.

### 3.2.2 Land Use at BAFB

BAFB, occupying approximately 3,283 acres of land (BAFB 2003c), functions as a compact community of interest and has many characteristics of a small city. As the 460 ABW continues its new role as host unit for the installation with the resulting base population growth and facilities construction, this aspect will become more pronounced.

Currently, BAFB lacks many of the amenities associated with an active-duty United States Air Force (USAF) installation. The closure of nearby Lowry Air Force Base (AFB) in 1994 and Fitzsimons Army Medical Center in 1999 is resulting in a consolidation of functions on BAFB and a consequent need for additional facilities construction. The existing land use pattern on BAFB generally is that the Colorado Air National Guard (COANG) and reserve facilities are east of Aspen Avenue, and the active-duty facilities are on the west side. Most of the development focus on BAFB was in the northwest corner formed by the intersection of the main runway 14/22 and the now-inactive crosswind runway. Over two-thirds of the base land is open space or vacant. Table 3-2 presents the land use categories and approximate sizes on BAFB based on the General Plan (BAFB 2002a).

Land use at BAFB includes administrative, aircraft operations/maintenance, airfield, airfield pavements, community commercial, community service, housing—accompanied, housing—unaccompanied, industrial, medical, mission operations and maintenance (admin), open space, outdoor recreation, and water. A recent land use inventory (BAFB 2002a) describing typical facilities and features of each category as well as the total acres of land in each category provides approximate acreages for current land uses.

**TABLE 3-2**  
BAFB Land Use Inventory

<b>Land Use Category</b>	<b>Typical Facilities and Features</b>	<b>Total Acres</b>
Administrative	Personnel, headquarters, legal, and other support activities	201
Aircraft Operations/Maintenance	Aircraft maintenance hangars and docks, control towers, flight training facilities, and flight operations buildings	52
Airfield	Associated runway primary surfaces and safety areas	962
Airfield Pavements	Runways, taxiways, and aircraft parking aprons	228
Community Commercial	Commissary, base exchange, service stations, clubs, chapels, and library	50
Community Service	Child care centers and educational centers	91
Housing—Accompanied	Single- and multi-family housing units for accompanied permanent party service members	65
Housing—Unaccompanied	Dormitories and unaccompanied officer's quarters	81
Industrial	Utility systems, building maintenance facilities, and base support supply warehouses	352
Medical	Medical centers, clinics, and hospitals	14
Mission Operations and Maintenance (Administration)	High security areas	169
Open Space	Buffer areas and out-lease areas	716
Outdoor Recreation	Swimming pools, tennis courts, golf course, and other active recreation facilities	377
Water	Rivers, lakes, and streams	8

Source: BAFB 2002a

The Proposed Action sites are well matched to land uses. The CE Complex/Parking is located in an administrative zone, the Alert Facilities Upgrade is located in an Airfield Pavement zone, the High-Speed Taxiway is located in both the Airfield and Airfield Pavements zones, the three ANG fire station options are located in an industrial zone (Options B and C), and Aircraft Operations and Maintenance (Option A). Both options for the Weapons Release shop are located in Aircraft Operations and Maintenance zones.

### 3.3 Transportation

The ROI for transportation includes BAFB and surrounding roads that could be affected by base traffic. BAFB is in the Denver metropolitan area, a major crossroads in the Rocky Mountains for vehicular traffic with I-25, I-70, and I-76 connecting the area to other major cities in the U.S. Branching off I-70 to the west of the base, I-225 runs in a north-south direction through the city of Aurora. Intersecting with I-225 in the city of Aurora and running in an east-west direction are two major arteries, 6th Avenue and Mississippi Avenue, that serve as primary access to BAFB. Each road leads to one of two gates that

serve as main entrances to the base: the Main Gate (north entrance) and the Mississippi Gate (south entrance). Additionally, the Telluride Gate provides access to the BX/Commissary from 6th Avenue. Figure 1-1 shows road locations.

Estimated population trends in the five counties (Adams, Arapahoe, Denver, Douglas, and Jefferson) surrounding BAFB indicated a 4 percent increase in population between 1999 and 2000 (CDLE 2000). Because of the increase in population, the approximate values for the peak-hour traffic and the average daily traffic would be somewhat higher for current conditions.

### **3.3.1 Main Gate**

#### **Traffic Outside Base**

The primary east-west artery, 6th Avenue is located adjacent to the northern boundary of the base and provides access to the Main Gate. West of the gate on 6th Avenue, the number of vehicles during afternoon peak-hour traffic (5:00 p.m. to 6:00 p.m.) is approximately 1,300 per hour. East of the Main Gate, 6th Avenue turns into Highway 30. On State Highway 30, the number of vehicles during peak-hour traffic is 400 per hour (BAFB 2003g).

#### **Traffic On Base**

At the Main Gate, 6th Avenue intersects with Aspen Avenue, which accommodates the heaviest traffic on the base during morning and afternoon rush hours. According to a recent traffic study for BAFB, 655 morning peak hour inbound vehicles were recorded for the Main Gate (BAFB 2003g).

### **3.3.2 Mississippi Gate**

#### **Traffic Outside Base**

Mississippi Avenue provides access to BAFB through the Mississippi Gate, open during weekday peak commuting hours. West of the Mississippi Gate, Mississippi Avenue is a four-lane divided roadway with 700 vehicles per hour on the road during peak-hour traffic (BAFB 2003g).

#### **Traffic On Base**

At the Mississippi Gate, Mississippi Avenue intersects with South Vail Street that connects with Aspen Avenue in the central base area. Approximately 780 morning peak hour inbound vehicles utilize the Mississippi Gate (BAFB 2003g).

### **3.3.3 Telluride Gate**

#### **Traffic Outside Base**

The Telluride Gate intersects with the primary east-west artery 6th Avenue, which is located adjacent to the northern boundary of the base and is west of the Main Gate. This gate was designed primarily as limited use for the BX/Commissary patrons. There are two inbound and outbound gates that are open from 8 am to 8pm Monday through Saturday and 8 am to 6 pm on Sunday. Approximately 200 - 250 morning peak hour inbound vehicles utilize the Telluride Gate (BAFB 2003g).

## Traffic On Base

The Telluride Gate intersects with Steamboat Ave, approximately 2 blocks south of 6<sup>th</sup> Avenue. The heaviest traffic in this area travels west bound on Steamboat and south bound on Telluride during peak hours. Estimated 50 morning peak hour vehicles on Steamboat Ave, West of Aspen Avenue.

## 3.4 Biological Resources

### 3.4.1 Vegetation Communities and Wildlife

The ROI for biological resources is BAFB. BAFB is located in the Great Plains-Palouse Dry Steppe Province Ecoregion, in the shortgrass prairie ecosystem (Bailey 1995; Stoddart et al. 1975). Vegetation communities at BAFB can be broadly classified into the following types: blue grama/western wheatgrass mixed grass prairie, crested wheatgrass prairie, bottomland meadows, cottonwood/willows, weedy disturbed areas, and landscaped areas (BAFB 2002b). The prairie communities are the most diverse plant habitats and occur primarily on upland areas. Typically, the mixed grass prairie is characterized by blue grama grass interspersed with forbs such as scarlet globe mallow, prickly pear, and snakeweed, and other common grasses including tumble grass (*Schedonnardus paniculatus*) and three-awn (*Aristida fendleriana*, *Aristida longiseta*). Areas that receive slightly more moisture (for example, depressions or gullies) are dominated by fringed brome grass (*Bromus ciliatus*). Because no grazing pressure exists at BAFB, crested wheatgrass prairies are more uniform and have few other species associated with them. Crested wheatgrass prairie is the dominant vegetation type on BAFB, and is the only vegetation type characterizing the Proposed Action sites (BANGB 2002). Crested wheatgrass is a non-native species in Colorado.

Riparian areas at BAFB are characterized by cottonwood/willows and bottomland meadows. Bottomland meadows, generally wide and flat, may exhibit wetland characteristics with a dominance of fringed brome grass; a facultative wetland species in the western Great Plains. The Cottonwood/willows vegetation community characterizes parts of the riparian corridor that are moister and steeper than areas with fringed brome. Additional information on riparian areas and wetlands is provided in Section 3.5.3.

Weedy disturbed areas at BAFB consist of locations that have been disturbed by prairie dog colonies, and areas that were disturbed during construction activity. These disturbed areas are often the source of noxious weeds for the entire installation. State-listed noxious weed species characterizing disturbed areas include cheatgrass (*Bromus tectorum*), field bindweed (*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), Russian thistle (*Salsola kali*), Dalmation toadflax (*Linaria genistifolia* ssp. *Dalmatica*), and leafy spurge (*Euphorbia esula*).

Turf grasses are the predominant vegetation type on the landscaped areas of BAFB. Grass varieties consist of common introduced species, including Kentucky bluegrass (*Poa pratensis*), common Bermuda grass (*Cynodon dactylon*), wintergrass (*Poa annua*), and Alta fescue mixes (*Festuca* spp.). A variety of shrubs and trees are also present in landscaped areas on BAFB, including green ash (*Fraxinus pennsylvanica*), honey locust (*Gleditsia triacanthos*), Colorado spruce (*Picea pungens*), ponderosa pine (*Pinus ponderosa*), Siberian elm (*Ulmus pumila*), Gambel's oak (*Quercus gambelii*), and buffalo juniper (*Juniperus sabina*).

All of the elements of the Proposed Action are sited in areas characterized as weedy and disturbed from previous development, landscaped, or maintained (mowed).

The mixed grass prairie, crested wheatgrass prairie, bottomland meadows, and cottonwood/willows vegetation communities provide a diversity of habitats that support several wildlife species on BAFB. The wildlife species listed below, typical of the Colorado high plains, are known to occur on BAFB:

- **Amphibians and Reptiles.** Plains spadefoot toad (*Scaphiopus bombifrons*), bullfrog (*Rana catesbeiana*), northern leopard frog (*Rana pipiens*), bullsnake (*Pituophis melanoleucus sayi*), western hognose snake (*Heterodon nasicus*), plains garter snake (*Thamnophis radix*), and prairie rattlesnake (*Crotalus viridis viridis*).
- **Avian Species.** Horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), black-billed magpie, grasshopper sparrow (*Ammodramus savannarum*), western kingbird (*Tyrannus verticalis*), eastern kingbird (*Tyrannus tyrannus*), starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), pigeon (*Columba livia*), several species of blackbirds, ferruginous hawk (*Buteo regalis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), rough-legged hawk (*Buteo lagopus*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), great blue herons (*Ardea herodias*), black-crowned night herons (*Nycticorax nycticorax*), killdeer (*Charadrius vociferus*), western sandpiper (*Calidris mauri*), spotted sandpiper (*Actitis macularia*), mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), northern shoveler (*Anas clypeata*), Canada goose (*Branta canadensis*), double-crested cormorant (*Phalacrocorax auritus*), white pelicans (*Pelecanus erythrorhynchos*), redheads (*Aythya americana*), buffleheads (*Bucephala albeola*), pintails (*Anas acuta*), and herring gulls (*Larus argentatus*).
- **Fish.** Carp (*Cyprinus carpio*), and in Tollgate Creek west of BAFB, brook stickleback (*Labidesthes sicculus*), fathead minnow (*Pimephales promelas*), and white sucker (*Catostomus commersoni*).
- **Small Mammals.** Black-tailed prairie dog, pocket gopher (*Geomys bursarius*), thirteen-lined ground squirrel (*Citellus tridecemlineatus*), fox squirrel (*Sciurus carolinensis*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus auduboni*), white-tailed jackrabbit (*Lepus townsendi*), eastern cottontail (*Sylvilagus floridanus*), deer mouse (*Peromyscus maniculatus*), and meadow vole (*Microtus pennsylvanicus*).
- **Large Mammals.** Red fox (*Vulpes vulpes*), American badger (*Taxidea taxus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and long-tailed weasel (*Mustela frenata*). Pronghorn antelope (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*), found historically on BAFB, have been excluded through installation of the perimeter fencing along the base boundary.

### 3.4.2 Threatened, Endangered, and Species of Concern

Table 3-3 lists federal and state listed threatened or endangered species and state species of concern that could potentially occur on BAFB. Many of the potentially occurring species would not be expected to be present on BAFB because of the lack of suitable habitat, as

noted in the table. Listed species known to occur on BAFB include bald eagle, ferruginous hawk. State listed special concern species are burrowing owl and black-tailed prairie dog.

**TABLE 3-3**  
Federal and State Listed Species Potentially Occurring on BAFB, Arapahoe County, Colorado

Common Name (Scientific Name)	Habitat Preferences (Reason For Decline)	Federal Status	State Status	Known to Occur on BAFB	Potentially Suitable Habitat Present?
<b>Birds</b>					
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Sea coasts, rivers, and large lakes; nests in tall trees or cliffs near water (habitat destruction, illegal shooting, pesticides)	T	T	Yes	Yes
Ferruginous hawk ( <i>Buteo regalis</i> )	Grasslands with prairie dog colonies	—	SC	Yes	Yes
Interior least tern ( <i>Sterna antillarum</i> )	Sandy/pebbly beaches, inland river sandbars for nesting and shallow water for foraging (riverine alterations, habitat loss, nest disturbance)	E	E	No	No
Mountain plover ( <i>Charadrius montanus</i> )	Prairie grasslands, arid plains and fields; nesting plovers choose shortgrass prairies grazed by prairie dogs, bison and cattle, and overgrazed tallgrass and fallow fields (habitat loss, overgrazing, predation)	—	SC	No	Yes
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	Lower elevation forests mostly in deeply incised, rocky canyons; complex forest structures that contain uneven-aged, multi-level and old-aged, thick forests (logging, catastrophic wildfire)	T	T	No	No
Piping plover ( <i>Charadrius melodus</i> )	Sandy lakeshore beaches, sandbars within riverbeds, and sandy wetland pastures; all of which must be sparsely vegetated (habitat alteration and destruction; recreational activities near nesting sites)	T	T	No	No
Western burrowing owl ( <i>Athene cunicularia</i> )	Primarily found in grasslands and mountain parks, usually in or near prairie dog towns; also uses well-drained, steppes, deserts, prairies and agricultural lands (urbanization, decimation of prairie dog populations)	—	T	Yes	Yes
<b>Mammals</b>					
Black-footed ferret ( <i>Mustela nigripes</i> )	Closely associated with prairie dog habitat; utilizes prairie dog burrows for nesting (habitat loss, poisoning, canine distemper, plague)	E	T	No	Yes
Black-tailed prairie dog ( <i>Cynomys ludovicianus</i> )	Short-grass prairie, they avoid heavy brush and tall grass areas (habitat loss, sport hunting, extermination by ranchers/farmers)	C	SC	Yes	Yes
Preble's meadow jumping mouse ( <i>Zapus hudsonius preblei</i> )	In and near densely vegetated, shrub dominated riparian areas (habitat loss)	T	T	No	Yes



**TABLE 3-3**  
Federal and State Listed Species Potentially Occurring on BAFB, Arapahoe County, Colorado

Common Name ( <i>Scientific Name</i> )	Habitat Preferences (Reason For Decline)	Federal Status	State Status	Known to Occur on BAFB	Potentially Suitable Habitat Present?
<b>Plants</b>					
Colorado butterfly plant ( <i>Gaura neomexicana colora densis</i> )	Sub-irrigated, alluvial soils of drainage bottoms surrounded by mixed grass prairie; Elevation 5800-6200 ft. (vegetative succession, haying, grazing, herbicide spraying, urban expansion)	T	—	No	No
Ute ladies-tresses ( <i>Spiranthes diluvialis</i> )	Open wetland and riparian areas with permanent sub-irrigation; early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges (alteration of hydrology, invasive plants, habitat loss, low reproductive rate, loss of pollinators)	T	—	No	Yes

Source: Colorado Division of Wildlife (CDOW) 2003; USFWS 2003

C = Federal or state-listed candidate species

E = Federal or state-listed endangered species

SC = State-listed special concern species (not a statutory category)

T = Federal or state-listed threatened species

Partially because of its status as a keystone species, prairie dogs have been classified as a species of special concern. In February 2000, the U.S. Fish and Wildlife Service (USFWS) designated the black-tailed prairie dog as a candidate species (or a species warranted but precluded from listing on the threatened and endangered species list).

Potential suitable habitat has also been identified for the federally threatened Preble's meadow jumping mouse (Preble's) (*Zapus hudsonius preblei*) and Ute ladies' tresses (*Spiranthes diluvialis*) along riparian corridors of Tollgate Creek, Williams Lake, and other wetland areas existing on BAFB. Surveys on BAFB for Preble's and Ute ladies' tresses have found none. The USFWS has provided written concurrence of the survey results, and stated that a population of Preble's is not likely present within BAFB, and no direct adverse effects to Preble's would be expected from activities on BAFB (USFWS 2002). The USFWS has designated the BAFB area as being within a "block clearance zone" that does not support the black-footed ferret (*Mustela nigripes*); therefore, it is assumed that this species does not occur on the installation.

The occurrence of protected species has been identified in or near the Proposed Action area. Based on the results of recent surveys, prairie dogs and burrowing owls may occur near a majority of the Proposed Action Elements (EDAW 2003).

### 3.4.3 Wetlands/Riparian Areas, Waters of the U.S., and Floodplains

Six wetlands are identified on BAFB by the USFWS National Wetlands Inventory (NWI) maps (USFWS 1989a, 1989b). Wetland classifications include palustrine emergent and palustrine scrub/shrub. However, a survey of BAFB conducted in 2001 identified 23 wetlands (BAFB 2002b). The discrepancy between the NWI maps and the field survey are

not unusual because NWI maps are based on aerial photograph review and do not normally have the resolution that can be achieved during a field survey. In May 2001, a U.S. Army Corps of Engineers (USACE) representative made a jurisdictional determination that Williams Lake and its associated streams and drainage areas are isolated and not under the jurisdiction of Section 404 of the Clean Water Act (BAFB 2002b). While not jurisdictional wetlands, these areas would still be protected under Air Force Instruction (AFI) 32-7064, which requires monitoring, restoration, and enhancement of wetland habitats.

No elements of the Proposed Action are located within wetlands or waters of the U.S.

#### **3.4.4 Floodplains**

The Federal Emergency Management Act (FEMA) has designated the East Tollgate Creek drainage as being within the 100-year floodplain. No elements of the Proposed Action are located within the 100-year floodplain (BAFB 2003e).

### **3.5 Cultural Resources**

The ROI for cultural resources is BAFB. Based on the results of previous cultural resource surveys on BAFB, Buildings 801 and 909 are eligible for listing in the National Register of Historic Places (NRHP). These buildings are located near the proposed Alert Crew facilities. No known archaeological or other cultural resources exist on BAFB (BANGB 2000b).

### **3.6 Environmental Justice**

The ROI for environmental justice is BAFB and Arapahoe County. Environmental justice was considered in accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*. In 2001, the per capita personal income in Arapahoe County was \$47,030, a 2.8 percent increase from 2000 (BEA 2003). Approximately 6.1 percent of the population in Arapahoe County live below the poverty level, compared to 9.9 percent for Colorado and 13.3 percent for the U.S. (USCB 2003). The U.S. poverty threshold varies by family size and number of related children under the age of 18 per the U.S. Census Bureau. The poverty level for an average family of three is \$13,423 (USCB 2003).

Approximately 20.1 percent of Arapahoe County's population is minority, compared to 17.2 percent in Colorado and 24.9 percent for the U.S. (USCB 2003).

### **3.7 Socioeconomics**

#### **3.7.1 Population**

The ROI for socioeconomics is BAFB and Arapahoe County. The urban and rural population of Arapahoe County increased by 96,456 persons or 24.6 percent between 1990 and 2000 to 487,967 people (USCB 2003). In 2000, the general population of Arapahoe County was 79.7 percent White, 7.7 percent Black, 3.9 percent Asian, and 8.7 percent all other races or a combination of races (USCB 2003).

The population profile for BAFB as of December 2003 is indicated in Table 3-4 for people living in the area, some working and others receiving services on BAFB.

TABLE 3-4  
BAFB Population

Category	Population
Active Duty	3,600
Civilian Personnel	3,600
Contractor	1,750
Retirees	22,000
Dependents and Veterans	55,000
TOTAL	85,950

Source: BAFB 2003d

### 3.7.2 Income and Employment

Median income (household, family, and non-family) increased by greater than 40 percent between 1990 and 2000 in Arapahoe County (USCB 2003). Per capita personal income increased by approximately \$9,370 to \$28,147 (USCB 2003). Personal income in Arapahoe County between 1990 and 2000 increased 124 percent (BEA 2003). Non-farm and farm personal income increased 124 percent to approximately \$21.6 billion, and 447 percent to approximately \$1.7 million, respectively, in 2000 (BEA 2003). The categories with the highest percent increase in earnings between 1990 and 2000 were State Government (325 percent); Transportation and Public Utilities (297 percent); Finance, Insurance, and Real Estate (264 percent); and Agricultural Services (211 percent) (BEA 2003). The mining industry lost earnings between 1990 and 2000 (-19.1 percent) (BEA 2003).

Total full-time and part-time employment increased 62 percent to 389,723 jobs in Arapahoe County between 1990 and 2000 (BEA 2003). The largest percentage employment gains between 1990 and 2000 were in Construction (163 percent); Transportation and Public Utilities (130 percent); State Government (123 percent); and Agricultural Services (108 percent) (BEA 2003). Job loss was reported for Mining (-41 percent) and Farms (-15 percent) (BEA 2003).

Poverty status between 1990 and 2000 in Arapahoe County remained approximately constant at 5.8 percent below the poverty threshold (USCB 2003).

### 3.7.3 Housing

Between 1990 and 2000, housing in Arapahoe County increased by 28,170 units or 16.7 percent between 1990 and 2000 (USCB 2003). Housing occupancy increased to 97 percent by 2000, a 5.3 percent increase over the occupancy rate in 1990 (USCB 2003). Median gross rent increased 58.7 percent between 1990 and 2000 in Arapahoe County to \$735 per month (USCB 2003). The median value of owner-occupied housing increased by \$79,200, or 85.6 percent between 1990 and 2000 in Arapahoe County (USCB 2003).

Housing on BAFB consists of lease points rental units and unaccompanied personnel housing. There is no military family housing on BAFB. Lease point rental units are located in the local community. Future plans include construction of 332 privatized housing units on the base. Unaccompanied personnel housing (dormitories) on BAFB include a recently constructed dormitory that houses 144 persons, and an older 236-person dormitory. A third dormitory that would house 132 persons is proposed for construction in FY09.

## **3.8 Geology, Soils, and Topography**

### **3.8.1 Geology**

The ROI for geology, soils and topography is BAFB. BAFB is in the Denver Basin, a structural depression that is 300 miles long and 200 miles wide. This depression was created during a mountain building event referred to as the Laramide Orogeny. The basin covers 6,700 square miles, extending from Greeley in the north to Colorado Springs in the south, and from Limon westward to the Front Range. It is part of the Piedmont section of the Great Plains physiographic province that extends north and east into Wyoming, Nebraska, and Kansas (USAF 2000a).

The Denver Basin consists of geologic layers in excess of 13,000 feet thick that range in age from Late Pennsylvania through Quarternary. Seven principal sedimentary formations, listed in descending order within the basin are: the Castle Rock Conglomerate; the Dawson Arkose; the Denver, Arapahoe, and Laramie formations; the Fox Hills Sandstone; and a 5,000- to 8,000-foot-thick, relatively impermeable shale formation, the Pierre Shale, which forms the bottom of the basin (USAF 2000a). The Castle Rock Conglomerate and the Dawson Arkose outcrop south of the base but do not underlie BAFB.

Surficial material consists of unconsolidated, eolian (windblown) and alluvial (deposited by water) sediments that may reach a thickness of 30 feet. These sediments were initially deposited during the Pleistocene epochs and continue to be deposited today (USAF 2000a).

Coal reserves are present beneath the surface of BAFB; however, they are economically non-recoverable. Sand and gravel are mineral resources that also are in the area, but they are not economically viable reserves (BANGB 2002).

### **3.8.2 Soils**

The U.S. Soil Conservation Service (now known as the Natural Resources Conservation Service) prepared descriptions and maps of the soil associations present at BAFB in 1971. Fifteen soil types were identified on the base, most of which are classified as moderately to highly erodible (Table 3-5). The major soil associations at BAFB are classified as Fondis Weld, Renohill-Buick-Little, and Alluvial land-Nunn (BAFB 2002b). Other areas on BAFB were identified as gravel pits, rock outcrop complex, terrace escarpments, and sandy alluvial land.

**TABLE 3-5**  
BAFB Soils Description

<b>Symbol</b>	<b>Name</b>	<b>Description</b>
BsB	Bresser sandy loam, terrace, zero to 3 percent slopes	Occurs along major drainage ways, runoff is slow
BvC	Bresser-Truckton sandy loams, 3 to 5 percent slopes	Occurs on slopes and ridgetops in native grass, susceptible to soil blowing
BxC	Buick loam, 3 to 5 percent slopes	Occurs in small, scattered areas on uplands in native grass, susceptible to soil blowing
FdB	Fonids silt loam, 1 to 3 percent slopes	Occurs on uplands, runoff is moderate, slightly to moderately susceptible to soil blowing and water erosion
FdC	Fondis silt loam, 3 to 5 percent slopes	Occurs on uplands, suited to cultivated crops, susceptible to soil blowing
FoC	Fondis-Colby silt loams, 3 to 5 percent slopes	Occurs along ridge tops, runoff is moderate, water holding capacity is high
FoW	Fondis-Weld silt loams, 1 to 3 percent slopes	Occurs on uplands, well-drained, moderately slow permeability, water capacity is high
NIB	Nunn loam, zero to 3 percent slopes	Occurs on terraces, runoff is slow, erosion is slight, water holding capacity is high
NrB	Nunn-Bresser-Ascalon complex, zero to 3 percent slopes	Occurs on lower parts of slopes, well suited to cultivated crops, water holding capacity is moderate to high, erosion is slight to moderate
RhD	Renohill-Buick loams, 3 to 9 percent slopes	Occurs on uplands, not suited to cultivated crops, erosion is severe
RtE	Renohill-Little-Thedalund complex, 9 to 30 percent slopes	Occurs on grassy hillsides, runoff is moderate to rapid, not suited to cultivated crops.
Ru	Rock outcrop	Occurs near where soils have been stripped so that interbedded shale and sandstone are exposed at the surface, highly susceptible to soils blowing and erosion
Su	Sandy alluvial land	Occurs as narrow areas along major drainage ways, next to stream channels, subject to yearly flooding
Tc	Terrace escarpments	Occur next to streams and drainage ways, soil slipping and sloughing are common, water erosion is severe
WeB	Weld silt loam, zero to 3 percent slopes	Occurs on uplands, water holding capacity is high, soil blowing can be severe
WrB	Weld-Deertail silt loams, zero to 3 percent slopes	Occurs on uplands, runoff is slight, moderately susceptible to soil blowing

Source: COANG 1999a

The Fondis-Weld association covers most of the surface area on base. It consists of deep loamy soils that formed mainly in silty material deposited by the wind. The Alluvial land-Nunn association typically is found along adjacent floodplains and terraces mainly along East Tollgate Creek consists of soils that have moderate permeability and high water holding capacity (BANGB 2002). The Renohill-Buick-Little association is comprised of moderately deep, well-drained, loamy to clayey soils.

The National Resource Conservation Service (NRCS) completed a site visit for soil use as potential cropland at BAFB in January 2001. The determination made by the NRCS was that "...it would not be feasible to introduce agricultural production on the base without the added cost of installing conservation practices and/or irrigation system (NRCS 2001)." Dry cropland soils were identified on base as being of statewide importance. However, after a facility tour, few areas were recognized as having the potential to be converted to cropland, mainly because of parcel size and accessibility for farming operations.

The majority of the Proposed Action elements (CE Complex, the Alert Facilities, High-speed Taxiway/Warm-Up Pad, Fire Training/Crash Rescue Facility (Options A and B), Weapons Release and Load Training Complex, and the East Parking Apron are all sited on Fondis-Weld Silt Loam with 1 to 3 percent slopes. The Fire Training/Crash Rescue Facility (Option C) is located on an area covered by rock outcrops, Fondis Silt loam 1 to 3 percent slopes, and Renohill-Buick loams 3 to 9 percent slopes. The Approach Lighting Proposed Action is located in an area covered by Fondis Silt Loam 3 to 5 percent slopes.

### **3.8.3 Topography**

The topography of BAFB is somewhat flat, with rolling uplands divided by northward and northwest draining intermittent streams. Elevations on base range from 5,700 feet in the southeast corner to 5,470 feet in the northwest corner. BAFB is located within the western portion of the central high plains of Colorado to the west of the Great Plains. The base is approximately 50 miles east of the Continental Divide (BANGB 2002).

## **3.9 Water Resources**

### **3.9.1 Surface Water**

The ROI for water resources is BAFB and associated drainage basins. The drainage area at BAFB comprises 3,200 acres, of which 515 acres (14.8 percent) are impervious surface (BAFB 2004). The base has extensive natural and man-made surface drainage as well as underground storm drainage lines.

Stormwater runoff from BAFB drains into one of three streams adjacent to the base. East Tollgate Creek receives flows from the western side of the base. Sand and Murphy Creeks receive flows from the eastern side of the base. All three are intermittent streams in the vicinity of the base and flow predominately in the spring and summer. Sand Creek is perennial downstream from the base. The streams are tributaries to the South Platte River which is located approximately 15 miles northwest of the base and is the primary surface water drainage system in the region. Williams Lake, the largest surface water source on BAFB, is located in the northeast portion of the base and was created by damming a minor tributary to Murphy Creek in 1961. It occupies approximately 10 acres. The lake holds runoff and is used strictly for fire-fighting or recreational purposes (BANGB 2002).

Stormwater on BAFB is regulated under the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities. The NPDES permit considers all of BAFB an industrial site. The permit recognizes the potential for runoff contamination, authorizes the discharge of storm water associated with industrial activity, and requires annual monitoring activities. BAFB also operates under a NPDES General Permit for Storm Water Discharges from a Federal Facility Small Municipal

Separate Storm Sewer System. BAFB currently protects its watershed through compliance with a number of federal, state, local, and USAF environmental regulations that require the installation to have detailed spill control and response procedures and to implement stormwater pollution prevention best management practices (BMPs). Specific watershed protection measures used by BAFB include spill cleanup equipment at industrial locations, integrated pest management to reduce pesticide use, and reduction of fertilizer applications. To control the discharge of floating pollutants resulting from accidental spills, the base maintains oil containment boom systems and absorbents. Wastewater generated at the installation is discharged to the sanitary sewer.

### **3.9.2 Groundwater**

Four major bedrock aquifers underlie BAFB within the Denver Basin: the Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills. The aquifers are separated by beds of shale with low permeability and are located in zones of sandstones and siltstones. The Denver Formation is the uppermost aquifer and is approximately 1,000 feet thick. It is classified as a tributary in the area surrounding BAFB because it comes in contact with surrounding surface water systems and their alluvium. It is approximately 175 feet thick in the area under the base. The Upper and Lower Arapahoe aquifers are 400 to 700 feet thick and underlie the Denver Aquifer. The Laramie-Fox Hills Aquifer is 600 to 800 feet thick and underlies the Arapahoe aquifers. The Denver and Arapahoe aquifers meet USEPA drinking water standards. The Denver Basin aquifer system is a secondary source of drinking water for suburban Denver and nearby rural communities. Groundwater flow is generally to the northwest, following the trend of stream drainages toward the South Platte River north of Denver (BANGB 1998b).

Alluvial aquifers exist in the area surrounding BAFB. They result from alluvial deposition from erosion and are associated with the East Tollgate and Sand Creeks. Groundwater recharges to this aquifer through direct infiltration of precipitation and irrigation water (BANGB 2002).

Historically, BAFB has derived its water supply from six deep wells located on base. Four of the wells are not operational and one well augments Williams Lake (BANGB 1998b and 2000). BAFB has received domestic and municipal water from the City of Aurora since 1986, when the base system was connected to the City of Aurora's distribution system.

## **3.10 Solid and Hazardous Materials and Waste**

### **3.10.1 Hazardous Wastes**

The ROI for solid and hazardous materials and waste is BAFB. Two classifications of wastes are generated at BAFB: nonhazardous solid waste and hazardous waste. Nonhazardous solid waste is removed by a contractor for off-site disposal. Recyclables are also removed from the base by a contractor.

BAFB is a small quantity generator. Hazardous wastes generated at BAFB include waste paint-related materials, washer sludge, paint chips, sealant, waste fuel, solvent, and epoxy resin. The responsibility for managing hazardous waste lies with the generating organization and the Base Environmental Flight and the Hazardous Waste Manager, and compliance with the Hazardous Waste Management Plan for the base. The Defense Reutilization and Marketing Office (DRMO)

at Fort Carson in Colorado Springs provides a contract-based hazardous waste disposal service to the installation. A contractor transports the waste to the treatment, storage, and disposal (TSD) location.

### **3.10.2 Hazardous Materials**

Operations at BAFB require the use and storage of hazardous materials. Hazardous materials management is the responsibility of each individual or organization.

Approximately 61 operations base-wide use hazardous materials. Hazardous materials on base include various paints; pesticides; adhesives; batteries; hydrazine; propylene glycol; and petroleum, oils, and lubricants (POL). BAFB uses the Environmental Management Information System (EMIS) to track hazardous materials brought on base. Each organization is responsible for ordering the hazardous materials they use (BANGB 2000a).

There are 57 ASTs at BAFB to store JP-8 jet fuel, glycol, fuel oil, gasoline, and diesel. Two 210,000-gallon floating internal roof ASTs store JP-8 at the POL storage facility. According to the Environmental Office, all historic underground storage tanks were removed from the base. The work was completed in 1997-1998. The base was granted a waiver to install three 120,000-gallon USTs to store gasoline and diesel at the Army & Air Force Exchange Services (AAFES) Station that is part of the new Base Exchange.

Emergency response to spills or releases of hazardous materials is governed by the requirements of the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), Executive Order 12580, and the Emergency Planning and Community Right to Know Act (EPCRA). Under CERCLA, the resident agencies at BAFB and contractors are responsible for reporting release of reportable quantities to the National Response Center within 24 hours.

### **3.10.3 Environmental Restoration Program Sites**

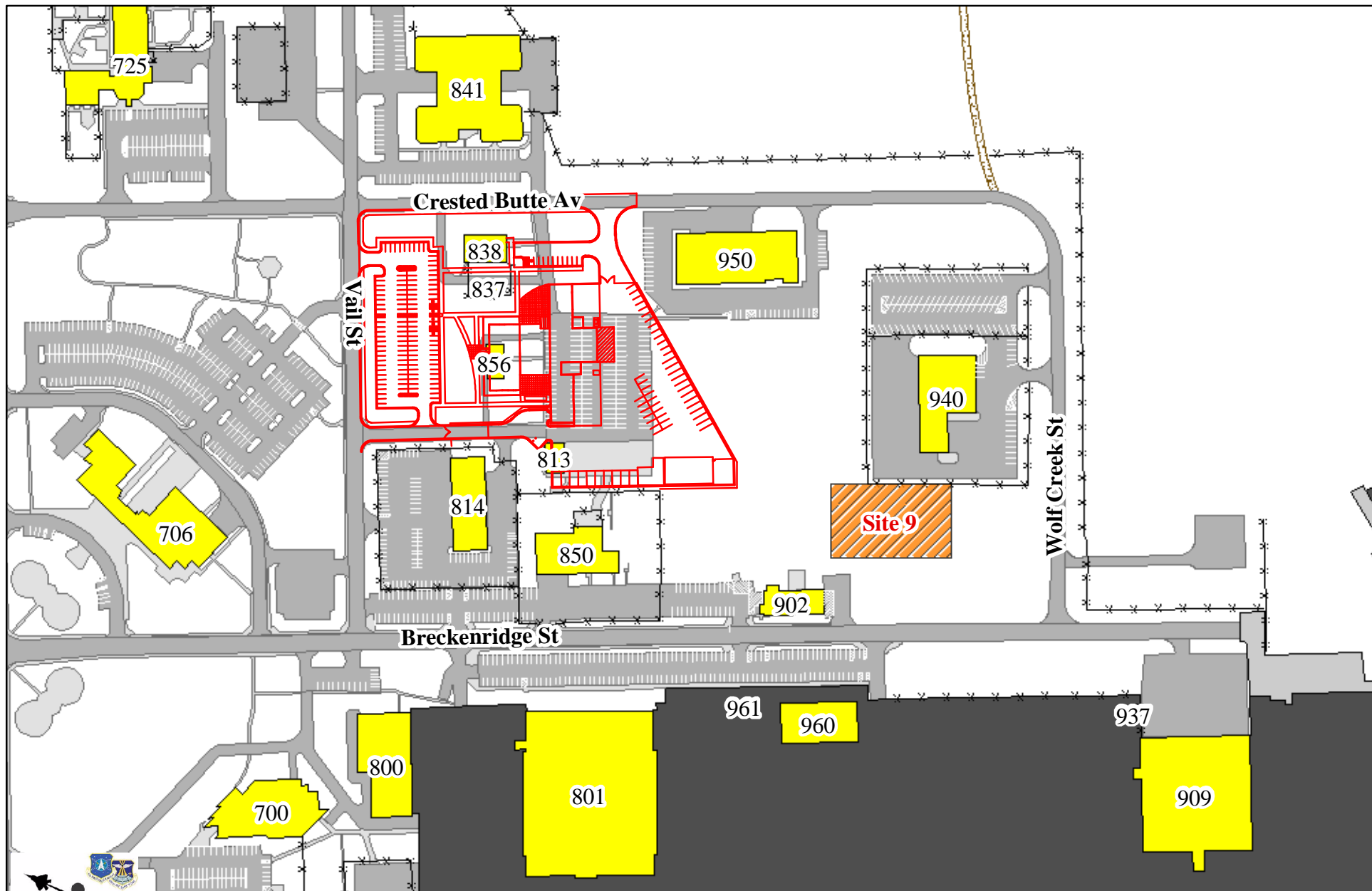
The Air Force established the Environmental Restoration Program (ERP) to identify, characterize, and evaluate past disposal sites and remediate contamination on its installations as needed to control the migration of contaminants and potential hazards to human health and the environment in accordance with CERCLA requirements. BAFB is currently conducting a basewide preliminary assessment under the ERP program. Ten ERP sites exist on BAFB (2002a). One of these sites, Fire Training Area 2 (Site 1) is located in an area adjacent to Building 1606, which is one of the fire station options for the Proposed Action. A closed ERP site, Site 6, is located near the weapons release shop (Building 805) element of the Proposed Action. ERP Site 9, a UST burial site, is located in the general vicinity of the proposed CE complex. (See Figure 3-1)

### **3.10.4 Asbestos**

The current Air Force Policy is to manage or abate asbestos containing material (ACM) in active facilities and remove ACM in accordance with regulatory requirements before facility demolition. ACM is abated when there is a potential for asbestos fiber release that would affect the environment or human health.

The BAFB Asbestos Management Plan identifies procedures for management and abatement of asbestos and includes an ACM survey that covers 179 buildings on base, including the buildings in this Proposed Action. The only structure in the Proposed Action





that was determined to contain asbestos was Building 1606 (Option C for the Fire Training/Crash Rescue Facility of the Proposed Action). The Air Force requires that, prior to renovations or demolition of existing non-residential buildings, asbestos sampling be performed by a contractor to determine the percent and type of asbestos in the material.

Infrastructure, including asbestos lined pipes, was left in place during some demolition projects conducted in the 1950s and 1960s. Therefore, the potential exists for either finding asbestos lined pipes or asbestos contaminated soil during construction. Also, in January 2003, soils samples were taken from eleven sites of construction proposed for fiscal years 2004 to 2007. The proposed CE Complex site was included in the soil sampling. No asbestos fibers were detected in four soil samples (BAFB 2003f).

### **3.10.5 Lead-Based Paint**

Air Force Policy (1993) ensures that lead-based paint hazards are avoided or abated during building modifications. The DoD banned the use of lead-based paint in 1978. The Base Engineer assumes that all structures constructed prior to 1985 potentially contain lead-based paint. A lead-based paint survey is in process for BAFB facilities, but the results are unavailable at this time.

### **3.10.6 Polychlorinated Biphenyls**

Toxic Substance Control Act (TSCA), 15 U.S.C. Section 2601, et seq., as implemented by 40 CFR Part 761, regulates polychlorinated biphenyls (PCBs). According to the BAFB Environmental Office all transformers had been tested and any containing PCBs had been removed by 1996. By 1998, the base no longer had any PCB-containing electrical transformers. According to files kept by CEV, leaking transformers were found in Building 913, a transfer substation, and Building 901, an electrical vault. A September 1999 visual site inspection uncovered PCB-containing electrical equipment at the Crash House, Building 1606 (one of the fire station options for the Proposed Action). This equipment subsequently has been removed, and a note was made that oil had leaked from the equipment. A feasibility study will be conducted in FY 2004 to evaluate remedial alternatives.

### **3.10.7 Pesticides**

Pesticides routinely are applied throughout BAFB, with the majority of applications coordinated by the Public Health Officer. Pesticides are stored at the Entomology Facility in Building 306. BAFB practices integrated pest management (IPM) that seeks to limit pesticide applications by applying treatments when an outbreak has occurred or prior to any training exercise. IPM utilizes four basic pest control methods: mechanical/physical control; habitat control; biological control; and chemical control (BANGB 1999).

Pesticide applications include their use to control roaches in food service areas, and the spraying of herbicides for weed control along base boundaries, aircraft parking aprons, runways, and taxiways.

### 3.11 Noise

The ROI for noise is BAFB and surrounding areas. The federal noise measure used for assessing total daily noise exposures in communities is the day-night average sound level (DNL) in units of decibels (dB). Most people are exposed to sound levels of 50 to 55 DNL or higher on a daily basis. Research indicates that most of the population is not highly annoyed by outdoor sound levels below 65 dB. Therefore, most agencies have identified 65 dB as a criterion that protects those most affected by noise, and that can often be achieved on a practical basis.

Base activities that have the highest potential source for noise impacts are the aircraft/airspace operations. The Air Installation Compatible Use Zone (AICUZ) study (BANGB 1998a) plotted the DNL from 65 to 80 dB for a typical busy day at BAFB. The DNL 65 dB contour covers the main runway, and extends approximately 1 mile southeast and 1 mile northwest over Aurora, Colorado in Arapahoe County. Most of the base (BANGB 1998a) and all of the Proposed Action sites are located within the 65 dB noise contours, meaning noise levels are greater than or equal to 65 dB.

### 3.12 Ordnance

The ROI for ordnance is BAFB. Munitions are stored in special Munitions Storage Areas (MSAs) located on the east portion of BAFB adjacent to the control tower. The munitions storage area includes igloos and munitions maintenance shops. MSAs are separated from other buildings or populated areas of the base to decrease the possibility of injury in the event of an accident. Explosive safety clear zones encompass the munitions storage area (east of the runway), munitions hold area (south side of Taxiway L), the hot cargo pad (east side of runway near munitions storage area), and skeet range (northeast portion of the base near Williams Lake). These areas have been isolated in the central portion of the base between the base's eastern boundary and the runway. No base facilities, other than those directly associated with munitions storage, are located within explosive safety clear zones encompassing base MSAs. No elements of the Proposed Action are associated with base MSAs.

### 3.13 Utilities

The ROI for utilities is BAFB and the City of Aurora. Upgrades and expansion of the existing utility infrastructure are being planned for BAFB, as detailed in the recent Environmental Assessment for Phase III Infrastructure and Expansion at Buckley Air Force Base (USAF 2003). Xcel Energy provides natural gas and electricity to BAFB. Total gas and electricity usage for the base in 2002 was 1,344,167 hundred cubic feet, and 98,952,436 kilowatt-hours (kWh), respectively (USAF 2003).

Industrial and domestic wastewater are generated by BAFB. Industrial wastewater, comprised of water from oil/water separators, does not require pretreatment. The base is operating under a wastewater permit issued by the Metro Wastewater Reclamation District. BAFB had an average daily flow of 150,000 gallons of wastewater per day in 2002 (BAFB 2003). The Metro Wastewater Region treatment plant has a design capacity of 185 million

gallons per day (mgd), projected for regional population estimates through 2010. The majority of wastewater at BAFB is managed through a domestic sewer system serviced primarily by Metro Wastewater Reclamation District. Additionally, some septic tanks are still operational on the base. No septic tanks are associated with the Proposed Action.

Potable water for BAFB is supplied by the City of Aurora. The base used about 102,448,000 gallons of water in 2002 (BAFB 2003). The City has been recovering from Stage II drought conditions, and it is expected water allocations for the base will continue to increase.

Solid waste from BAFB is collected and disposed via a private contractor. Collected waste is routinely transported to the Denver-Arapahoe Disposal Site in Arapahoe County.

The communications infrastructure at BAFB was upgraded by the 140 WG in 2000. This system is being expanded with implementation of the current Combat Information Transport System (CITS) project.

### **3.14 Safety**

The ROI for safety and pollution prevention is BAFB. Aircraft mishaps are the primary concern for safety with regard to military training flights. Mishaps are classified from Class A (can include fatality, costs greater than \$1 million, or destruction of military aircraft) to Class D or less (total damages less than \$1,000). Two Class A mishaps affected BAFB in 1993 and 1994. BAFB has reported no additional aircraft mishaps. The Accident Potential Zones (APZs) and Clear Zones (CZ) at BAFB extend 15,000 feet from both ends of the runway. BAFB has developed a Bird Aircraft Strike Hazard (BASH) plan to minimize the threat and occurrence of bird strikes and wildlife hazards. Quantity distance (QD) arcs for storage of explosive materials exist in portions of the base, and may occur near elements of the Proposed Action.

### **3.15 Pollution Prevention**

In the first quarter of FY 04, BAFB diverted 193 tons of solid waste from landfill disposal via recycling. Additional resource conservation activities on BAFB include building “green” for many of the recent building construction projects.

# 4.0 Environmental Consequences

## 4.1 Air Quality

### 4.1.1 Proposed Action

Impacts to air quality would be considered significant if pollutant emissions associated with the implementation of the Proposed Action were to cause or contribute to a violation of any national or state ambient air quality standard, exposed sensitive receptors to substantially increased pollutant concentrations, represented an increase of 10 percent or more in affected AQCR's emissions inventory, or exceeded any significance criteria established by the Colorado State Implementation Plan (SIP). Air quality was evaluated to determine the potential change in fugitive dust emissions and vehicle exhaust generated from heavy vehicles and equipment during construction.

Fugitive dust emissions (particulate matter less than 10 micrometers in diameter [PM<sub>10</sub>], would be produced during construction activities including earth moving, grading, trenching, material handling, and construction related travel on unpaved surfaces. A conservatively high estimate (based on moderate conditions and a dry climate) of the standard dust emission factor for construction activities is 1.2 tons of dust generated per active acre per month of activity. This factor does not include consideration of dust suppression actions. It was then assumed that about half the total acreage for each project element would be active or exposed at any one time, and that dust suppression practices would minimize potential emissions. Based on this analysis, fugitive dust emissions for each element of the Proposed Action would be well below the annual *de minimus* threshold of 100 tpy (Table 4-1).

TABLE 4-1  
Estimated PM10 Emissions for Project Components

Fiscal Year	Project Element	Total Acres	Emissions/ month	Months of Construction	Emissions/year (tons)
2004	CE Complex	5.4	6.12	4	12.24
	Approach Lighting Runway 14	0.9	1.08	2	1.08
Total 2004					13.32
2006	Alert Facility	5	6.0	4	12.0
2009	High Speed Taxiway— Warm-up/Holding Pad	20/8	33.6	4	67.2
2010	Fire Training/Crash Rescue Facility	0.4	0.48	4	0.96
	East Parking Apron	11	13.2	2	13.2

**TABLE 4-1**  
Estimated PM<sub>10</sub> Emissions for Project Components

Fiscal Year	Project Element	Total Acres	Emissions/ month	Months of Construction	Emissions/year (tons)
2011	Weapons Load Training Complex	0.3	0.36	2	0.36
2013	Weapons Release Complex	0.4	0.48	2	0.48

In accordance with the BAFB Title V Operating Permit, the calculated potential to emit PM<sub>10</sub> for construction projects in 2003 was 28 tons per year (tpy). The General Conformity *de minimus* threshold is 100 tpy for PM<sub>10</sub> emissions. The majority of the Proposed Action construction projects will be implemented in separate years. The only elements proposed for construction in FY04 are the CE complex (Element 1 of the Proposed Action) and the approach lighting for Runway 14 (Element 8). Thus, when combined with other BAFB construction emissions, the amount of PM<sub>10</sub> emissions would be significantly below the *de minimus* threshold. These relative amounts would be average and similar for the majority of the other elements of the Proposed Action because construction of most elements will be spaced over several years (see Table 4-1). Dust best management practices and mitigation actions including wetting disturbed soils and soil stabilization will be implemented during construction activities.

Emissions caused by internal combustion engine exhausts would be temporary and would not result in any long-term impacts. The schedule for construction of the Proposed Action elements (see Table 2-1) would be spaced such that none of the Proposed Action elements would be constructed concurrently, thus minimizing the potential for concentrated levels of emissions. Although information on contractors or specific construction plans are currently available, worst-case emissions were calculated for the high-speed taxiway/warm up/holding pad, the largest project in the Proposed Action (Table 4-2). These calculations were based on USEPA guidance documents (USEPA 1995). Thus, emissions associated with this and other construction projects of the Proposed Action would be well below the USEPA *de minimus* values. As directed by 5 CCR 1001-5, an Air Contaminant Emissions Notice would be obtained from the State of Colorado for all construction activities identified in the Proposed Action. An Air Pollutant Emissions Notice (APEN) would be filed with CDPHE, Air Pollution Control Division (APCD) if design calculations indicate conditions during construction require this notification. A fugitive dust control plan would also be submitted to the Tri County Health Department and APCD prior to construction initiation. Operation of the Proposed Action would not result in significant changes in operations or personnel levels at BAFB.

**TABLE 4-2**  
Combustion Emission Estimates (tpy)

Source	NOx	SO <sub>2</sub>	ROG	CO	PM <sub>10</sub>
Construction Worker Trips	0.012	---	0.01	0.021	0.0021
Stationary Equipment	0.032	0.00	0.03	---	0.0021
Mobile Equipment—Gas	1.13	0.07	1.95	---	0.08
Mobile Equipment—Diesel	10.05	0.91	0.98	---	1.10
<b>TOTAL</b>	<b>11.224</b>	<b>0.98</b>	<b>2.97</b>	<b>0.021</b>	<b>1.184</b>

Paving emissions were estimated for the high-speed taxiway/warm up holding pad, the largest construction project of the Proposed Action. Standard reactive organic gas (ROG) emissions for road paving are 2.62 pounds ROGs per acre per month. The following assumptions were used: 4 months for construction, a maximum of 25 percent paving would occur within any 1 month, and a maximum 28 acres paved. This results in an estimated 18.34 pounds of ROG per month, for a total of 73.36 pounds for the entire project in 1 year, well below the threshold of 5 tons of ROGs per year.

Based on this analysis, impacts to air quality would be short-term and low, and no significant impacts to air quality would result from implementation of the Proposed Action. Implementation of the Proposed Action would not result in significant impacts to air quality.

#### 4.1.2 No Action Alternative

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions would remain unchanged.

## 4.2 Land Use

### 4.2.1 Proposed Action

Impacts from the Proposed Action to land use would be significant if proposed land uses were inconsistent or incompatible with existing land use plans or policies or in conflict with airfield planning criteria. Construction associated with the Proposed Action has been sited in accordance with established land use development guidelines and the BAFB General Plan (BAFB 2002a). The site locations for all elements of the Proposed Action would not change existing land use designations, and would remain compatible with current land uses. Therefore, implementation of the proposed action would not result in significant impacts to land use.

### **4.2.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions would remain unchanged.

## **4.3 Transportation**

### **4.3.1 Proposed Action**

Impacts from the Proposed Action to transportation would be significant if the transportation network with no history of exceeding capacity experienced traffic volumes at or above capacity, and/or increase in substandard road conditions. The construction, demolition, and modification elements of the Proposed Action would have minor temporary impacts on local and on-base traffic resulting from increased traffic by construction vehicles and possible temporary road closures. Construction traffic would comprise only a small portion of the total existing traffic volume. Additionally, the minor increases in construction traffic resulting from the Proposed Action would be temporary, with no long-term effects. The schedule for construction of the Proposed Action elements (see Table 2-1) would be spaced such that all elements would not be constructed concurrently, thus minimizing the potential concentrated levels of construction traffic. Implementation of the Proposed Action would not result in significant impacts to transportation.

### **4.3.2 No Action Alternative**

Under the No Action Alternative, existing transportation conditions and circulation patterns would remain at present levels and patterns, and no impacts would occur.

## **4.4 Biological Resources**

### **4.4.1 Proposed Action**

Impacts from the Proposed Action would be significant if there would be a long term substantial effect to species or habitats of concern. All elements of the Proposed Action would be sited in previously developed, disturbed, maintained areas. Development of the Proposed Action would not result in adverse effects to the majority of the biological resources described in Section 3.4. However, based on a January reconnaissance of the Proposed Action sites, and the results of a recent base survey for black-tailed prairie dogs and burrowing owls (EDAW 2003), black-tailed prairie dogs and their commensal species (for example, burrowing owl, snakes, rabbits) likely would be impacted by development of the following elements of the Proposed Action:

- Element 1, CE Complex
- Element 4, Fire Crash/Rescue Facility (Option A)
- Element 6, Weapons Release Complex



Prairie dogs are not currently located within 1,000 linear feet of the centerline of the runway and all taxiways are being removed to minimize Bird Aircraft Strike Hazards (BASH) (BAFB 2002b), and in compliance with BAFB prairie dog management practices that include removal of prairie dogs from the flightline (BAFB 2001). The construction area for the proposed facilities would be designated a prairie dog control zone in accordance with Section 2.2.2 of the *Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley Air Force Base* (BAFB 2001). Prairie dogs within the control zone would be managed in accordance with the recommendations in the EA. All proposed development sites would be monitored for prairie dog and burrowing owl occurrence prior to initiation of construction activities. Burrowing owls would be monitored and managed in accordance with CDOW guidelines. If burrowing owls are using the site, consultation with CDOW and USFWS would be required prior to construction at the site.

Rabbits, snakes, and other small mammals also use black-tailed prairie dog burrows. Destruction of the black-tailed prairie dog burrows would have a direct, local, minor adverse effect on the populations of these other species as a result of loss of habitat and the potential for some mortality of less mobile species when construction is initiated.

None of the Proposed Action elements would be sited in floodplains or wetlands. Therefore, no impacts to floodplains or wetlands would occur from implementation of the Proposed Action.

The Proposed Action would have a minor to moderate, local, direct adverse effect on the black-tailed prairie dog and potentially to the burrowing owl, if they are found to use the burrows. However, affected burrowing owls would not be harmed, but would be displaced to alternate habitat. These effects do not represent a significant impact on biological resources.

#### **4.4.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for biological resources would remain unchanged.

### **4.5 Cultural Resources**

#### **4.5.1 Proposed Action**

Impacts of the Proposed Action to cultural resources would be significant if important cultural resources were not preserved. All elements of the Proposed Action would be sited in previously developed, disturbed, maintained areas. No known historical or archeological resources are associated with the elements of the Proposed Action sites. However, due to the proposed location for the Alert Crew facilities, there is concern about potential effects to Hangars 801 and 909. Review of the proposed construction footprint for the Alert Crew facilities indicates that this action should not affect Hangars 801 or 909. Ongoing correspondence with the State Historic Preservation Office (SHPO) should confirm that proposed actions for the Alert Crew Facility will not affect Buildings 801 or 909.

A slight potential exists for currently buried, unknown archaeological resources to be uncovered during ground-disturbing activities associated with construction. If archaeological resources are uncovered during construction, activities would be suspended until a qualified archaeologist could determine the significance of the resources. Thus, implementation of the Proposed Action would not result in significant impacts to cultural resources.

#### **4.5.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for cultural resources would remain unchanged.

### **4.6 Environmental Justice**

#### **4.6.1 Proposed Action**

Impacts of the Proposed Action relative to Environmental Justice would be significant if they affected minority or low income populations in the region. The percentages of low income and minority populations in Arapahoe County are less than or similar to state or national averages. Because all elements of the Proposed Action are on base, and not in minority areas, no significant adverse effects would result from the Proposed Action with regard to Environmental Justice.

#### **4.6.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for environmental justice conditions would remain unchanged.

### **4.7 Socioeconomics**

#### **4.7.1 Proposed Action**

Impacts from the Proposed Action to socioeconomics would be significant if there were an adverse shift in population or income trends. Construction activities associated with the Proposed Action would provide short-term economic benefits to the local economy. Beneficial impacts from short-term construction payrolls and materials purchased would not affect the economy on a regional scale. The addition of construction employees associated with the Proposed Action represents only a minimal fraction of the total regional workforce. Thus, implementation of the Proposed Action would not result in significant impacts to cultural resources.

#### **4.7.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action

Alternative, and baseline conditions for socioeconomic conditions would remain unchanged.

## **4.8 Geology, Soils, and Topography**

### **4.8.1 Proposed Action**

Impacts from the Proposed Action would be significant if project activities created uncontrolled soil erosion, or if unique geological features were disturbed. All elements of the Proposed Action would be sited in previously developed, disturbed, maintained areas. Soil associations and their properties are described in Table 3-5. The majority of the Proposed Action elements (CE Complex, the Alert Facilities, High-Speed Taxiway/Warm-Up Pad, Fire Training/Crash Rescue Facility [Options A and B], Weapons Release and Load Training Complex, and the East Parking Apron) are all sited on Fondis-Weld Silt Loam with 1 to 3 percent slopes. The Fire Training/Crash Rescue Facility (Option C) is located on an area covered by rock outcrops, Fondis Silt loam 1 to 3 percent slopes, and Renohill-Buick loams 3 to 9 percent slopes. The Approach Lighting Proposed Action is located in an area covered by Fondis Silt Loam 3 to 5 percent slopes. These soils have moderately slow permeability and are somewhat susceptible to wind and water erosion. Due to the physical properties of the soils, especially Fondis-Weld soil association, heavy equipment used during construction can create soil compaction.

Soils exposed during demolition and construction would be subject to short-term erosion effects, especially during site grading and trenching. Utilization of Best Management Practices during construction, including water applications, covering soils piles, and sediment fencing, would reduce and minimize temporary effects to soils. Reclamation of disturbed areas would restore surface soils to a stabilized condition. Additionally, disturbed soils will be managed to minimize establishment of noxious weeds in accordance with BAFB's noxious weed management program. Implementation of the Proposed Action would not affect geology or topography. Thus, no significant long-term or high short-term impacts to soils, geology, or topography would result from implementation of the Proposed Action.

### **4.8.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for soils, geology or topography resources would remain unchanged.

## **4.9 Water Resources**

### **4.9.1 Proposed Action**

Impacts from the Proposed Action to water resources would be significant if water quality regulatory requirements were exceeded. Ground disturbance during construction would occur in previously developed or disturbed areas. Best Management Practices (BMPs), including silt fencing, minimization of site grading, and stabilization/revegetation of

disturbed soils, would be implemented to minimize sedimentation and erosion during construction. Conditions and specifications in the Stormwater Pollution Prevention Plan for BAFB would be applied during construction. The schedule for construction of the Proposed Action elements (see Table 2-1) would be spaced such that all elements would not be constructed concurrently, thus minimizing the potential for concentrated levels of runoff or erosion. The stormwater flow generated by operation of the Proposed Action, including runoff from roofs and parking lots, would be incorporated into the current stormwater management system for BAFB. If greater than 1 acre of soil is disturbed during construction, a Notice of Intent (NOI) will be submitted for a General Permit for Stormwater Discharges associated with construction activities. Site design and BMPs would be used to mitigate any potential adverse impacts on the surrounding soils and drainages. Thus, no significant long-term or high short-term impacts to water resources would result from the Proposed Action

#### **4.9.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for water resources would remain unchanged.

### **4.10 Solid and Hazardous Materials and Waste**

#### **4.10.1 Proposed Action**

##### **4.10.1.1 Hazardous Waste**

Impacts from the Proposed Action relative to hazardous materials and waste would be significant if the storage, use, transport, or disposal of these substances resulted in a substantial increase in the environmental or human health risk. One of the buildings associated with the Proposed Action (Building 805) is listed in the Base Hazardous Waste Management Plan (HWMP) (BAFB 2003b) as an Initial Accumulation Point (IAP). Building 805 is the existing weapons load training complex, which would be modified under Element 5 of the Proposed Action by adding a classroom and four offices on the north side of the building and under Element 6 of the Proposed Action by expanding the southern portion to provide additional operational space. Building 805 is also included in Resource Conservation and Recovery Act (RCRA) waste stream inventory as generating liquid waste containing lead and cadmium. The Environmental Baseline Survey conducted in 2000 by Headquarters Air Force Center for Excellence also indicated that Building 805 has been used as a hazardous waste and/or petroleum waste storage area. No storage tanks exist on site, and the building is classified as a location where only release or disposal of petroleum substances has occurred. A September 1999 visual inspection of the site found no evidence of contamination. The Proposed Action at this site would not have impacts on the management of hazardous materials and wastes as no stored wastes would be relocated or disturbed during management activities associated with this alternative.

Building 806 has been classified as a facility that has stored medical/biohazardous wastes. Building 806 is a fire station, and would be modified under Element 4 of the Proposed Action, Option B. This Proposed Action would expand the existing fire station with additional bays, a classroom for training and crash rescue operations, and expanding the

existing parking lot. One oil/water separator is associated with Building 806. Proposed Actions at the site would not have impacts on the management of hazardous materials and wastes as no stored wastes would be relocated or disturbed during management activities associated with this alternative. A visual inspection of the site in September 1999 found no evidence of contamination.

Hazardous wastes that would be generated during construction activities for the Proposed Action include: paint-related materials, used oil, waste fuel, sealant, and solvent. Some hazardous wastes may be generated during operation of some of the elements of the Proposed Action. All hazardous wastes generated during construction and operation of the Proposed Action would be identified and managed effectively under the BAFB Hazardous Waste Management Plan by the Hazardous Waste Manager. Thus, implementation of the Proposed Action would not result in significant impacts from hazardous wastes.

#### **4.10.1.2 Hazardous Materials**

Building 806, the fire station, has one 200-gallon diesel AST. The facility has been classified as having been used as a hazardous material or petroleum product storage area. Hazardous materials that have been stored on site include paints, cylinder storage, aqueous fire fighting foam (AFFF) and halon.

Building 1606, which would be modified under Element 4 (Option C) of the Proposed Action, has one 2000-gallon AST. It is unknown at this time whether the AST would be removed during the expansion of Building 1606. Impacts from removing the AST, if required, are not anticipated since the tank would be emptied prior to removal. Flammable storage lockers at Building 1606 store paint, gasoline, diesel, thinners, oil, hydraulic fluid, and antifreeze. However, if any contamination is discovered during demolition or if a spill were to occur, BAFB would clean the site in accordance with all applicable local, federal, state, and Air Force regulations.

Hazardous materials used and managed during the construction and operation of the Proposed Action would include various paints; pesticides; adhesives; batteries; propylene glycol; and petroleum, oil, and lubricants (POL). All hazardous materials required for construction and operation of the Proposed Action would be managed in accordance with existing plans and procedures for BAFB. BAFB maintains an *Oil and Hazardous Materials Spill Prevention and Response Plan*; therefore, any spills potentially occurring during construction or operation of the Proposed Action would be managed to minimize environmental impacts. Thus, implementation of the Proposed Action would not result in significant impacts from hazardous materials.

#### **4.10.1.3 Environmental Restoration Program Sites**

ERP Site 1, Fire Training Area 2, is located in an area adjacent to Building 1606, which is part of Option C for the fire training/crash rescue facility element of the Proposed Action. A feasibility study will be conducted for ERP Site 1 in FY04 to evaluate remedial alternatives. ERP Site 9 is located in the vicinity of the proposed CE complex. Remedial actions have included removal of underground storage tanks and soils. It is not expected that construction of the CE complex will be affected by ERP Site 9, as it is not located within the construction footprint for the CE complex. However, if ongoing assessments reveal possible concerns within areas proposed for construction, they will be addressed. Assuming proper

identification and management of potential issues from ERP sites, implementation of the Proposed Action would not result in significant impacts from ERP sites.

#### **4.10.1.4 Asbestos**

Results of the asbestos survey for BAFB (USAF 2000a) indicated that the only building in the Proposed Action that tested positive for ACM was Building 1606 (Option C of Fire Training/Crash Rescue Facility of the Proposed Action). Tank, fitting and pipe insulation, and wallboard tested positive for ACM. If this option is selected for implementation, construction management would require special management and abatement procedures as identified in the BAFB Asbestos Management Plan, as approved by CDPHE. The remainder of the structures in the Proposed Action were constructed in 1996, and asbestos survey results indicate no ACM in these structures. Some soils on BAFB have also tested positive for ACM. Soils sampled at the proposed CE complex site tested negative for ACM. All Proposed Action sites would be tested for ACM prior to construction. If ACM is identified in soils, management and abatement procedures would be implemented in accordance with the BAFB Asbestos Containing Material in Soils Management Plan. The current version, dated December 30, 2003, is being reviewed by CDPHE. Even though ACM management or abatement may be required, no long-term significant impacts from ACM would result from implementation of the Proposed Action.

#### **4.10.1.5 Lead-Based Paint**

Waste generated during demolition of the Building 1606 (Option C of the Fire Training/Crash Rescue element of the Proposed Action) has the potential to contain lead-based paint (LBP). The building was constructed in 1954, and buildings constructed prior to 1985 must be tested for LBP prior to demolition. If tests prove that LBP is an issue, the hazards associated with it would be abated in accordance with applicable federal, state, and local regulations prior to demolition. With proper management and abatement of LBP, no significant impacts from LBP would result from implementation of the Proposed Action.

#### **4.10.1.6 Polychlorinated Biphenyls**

No PCB-containing transformers or other equipment exist on BAFB. However, Building 1606 (Option C of the Fire Training/Crash Rescue Facility element of the Proposed Action) was reported to have had a PCB oil spill on part of the floor from leaking equipment, which has since been removed. Part of the floor was removed to remediate the site. A feasibility study will be conducted in FY04 to evaluate remedial alternatives. Assuming remediation at Building 1606 would be completed prior to implementation of this element of the Proposed Action, no significant impacts relative to PCBs would result from implementation of the Proposed Action.

#### **4.10.1.7 Pesticides**

Implementation of the Proposed Action would not result in a significant increase in pesticide applications. Assuming proper labeling instructions and management procedures would be followed, no significant impacts from pesticides would result from the Proposed Action.

#### **4.10.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for hazardous waste and materials would remain unchanged.

### **4.11 Noise**

#### **4.11.1 Proposed Action**

Impacts from the Proposed Action relative to noise would be significant if noise levels on or off base were higher than recommended levels. Temporary noise impacts from the Proposed Action would result from construction activities. The maximum calculated sound levels from construction activities occur during the grading phase, and are estimated to be 85 dB at 50 feet from the center of a project site. Noise levels at 50 feet for some equipment used during demolition are: 80 dB for bulldozers; 83 dB for cranes; 85 dB for backhoes; and 91 dB for trucks. The AICUZ indicates that approximately 95 percent of the base is within the 65 dB runway noise contour, including all elements of the Proposed Action.

While the AICUZ process does not address noise generated from aircraft taxiing or on the warm-up/holding pad, it can be assumed that there may be a slight increase in noise for residences west of the airfield at the south end after the taxiway is moved from the east side of the airfield to the west side. However, the AICUZ 65-dB contour will not be affected. Runway operations for which noise contours for BAFB were developed will not significantly change based on this action. Therefore, noise would remain unchanged. Noise from taxiing aircraft does not affect the noise contours. Less than 5 percent of aircraft takeoffs are from the south, and landings are from the north. While all fighter aircraft use the warm-up/holding pad for final checks, few will remain more than 5 to 10 minutes on the pad. Engines are normally at idle and run-up to access the runway will be minimal as the design will address slopes of pavement to minimize increase in power beyond the minimal to start aircraft role. The only time aircraft would hold longer than the required time to run final checks on the pad is when aircraft are in the pattern for Buckley or when aircraft are in the pattern for Denver International Airport. These cases would result in longer hold times at the south end but would account for less than 10 percent of the flights from the south.

The warm-up/holding pad will be sited in accordance with DoD guidance, UFC 3-260-1 which allows for various siting options at or near the intersection of the new taxiway to the runway depending on local conditions, with the pad location and aircraft orientation such that it will minimize airfield safety issues, construction costs and noise impacts off the airfield. The taxiway will be designed to high-speed requirements for slopes and grades as fighter aircraft may have to use the taxiway for alert take off. In these cases aircraft would be taxiing at higher speeds but would still be within the 65-dB range. Alert aircraft typically do not use the warm up/hold pads as they are cleared for immediate take-off. Because alert training launches account for less than one to two launches per month and less than 5 percent of operations require launching from the south, it is estimated that very few alert launches will occur from the south. Based on this analysis, no incremental noise effects above those described in the AICUZ would occur from operation of the elements of the

Proposed Action. Noise levels associated with the proposed high-speed taxiway and warm-up/holding pad would remain within or under the 65-dB level for the runway noise contour. Therefore, no significant impacts from noise would be associated with implementation of the Proposed Action.

#### **4.11.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for noise would remain unchanged.

### **4.12 Ordnance**

#### **4.12.1 Proposed Action**

Impacts from the Proposed Action relative to ordnance would be significant if there were a substantial risk to environmental resources and human health and safety. No elements of the Proposed Action are associated with base MSAs. Therefore, no impacts from ordnance would be associated with implementation of the Proposed Action.

#### **4.12.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for noise would remain unchanged.

### **4.13 Utilities**

#### **4.13.1 Proposed Action**

Impacts of the Proposed Action to utilities would be significant if existing or projected utility capacities (natural gas, wastewater, water, solid waste, or electricity) were exceeded. The current utility infrastructure is scheduled for upgrading and expansion to accommodate projected new development on the base (USAF 2003). Industrial process water generated as part of operation of the Proposed Action will be permitted as necessary. Additionally, the construction dates for the elements of the Proposed Action are spaced over several years, and would not involve concentrated demands on the utility infrastructure. Thus, implementation of the Proposed Action would not result in significant effects to utilities on BAFB.

#### **4.13.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for utilities would remain unchanged.



## **4.14 Safety**

### **4.14.1 Proposed Action**

Impacts to safety from the Proposed Action would be significant if there were substantial increased risks from aircraft mishaps, and public health and safety. Pollution prevention impacts would be significant if no prevention measures were identified or implemented for the Proposed Action. Implementation of the Proposed Action would not result in any changes to BAFB standard work safety practices. An adequate level of safety will be maintained during implementation of the Proposed Action as required by Section 989.27. Thus, implementation of the Proposed Action would not result in significant impacts to safety on BAFB.

### **4.14.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for safety would remain unchanged.

## **4.15 Pollution Prevention**

### **4.15.1 Proposed Action**

In accordance with BAFB policies (Section 998.31), potential pollution that may result from the implementation of the Proposed Action would be identified, and pollution prevention measures would be applied during demolition, construction and operation.

Pollution prevention measures, including resource conservation and recycling opportunities, would be identified during the project design phase, and prior to initiation of demolition or construction activities. Additionally, opportunities for building “green” would be identified during the design of the new facilities. The Proposed Action would be subject to all pollution prevention programs at BAFB, including the RCRA program’s hazardous waste minimization plan. Relative to RCRA 6002, opportunities for use of designated and other recycled content products would be identified. Environmentally beneficial landscaping would also be applied as feasible. Thus, implementation of the Proposed Action would not result in significant impacts from preventable pollution.

### **4.15.2 No Action Alternative**

Under the No Action Alternative, the demolition, construction, and operation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for pollution prevention would remain unchanged.

## **4.16 Cumulative Impacts**

The Proposed Action would take place within the current boundaries of BAFB. The Proposed Action would not change existing land use, and would be consistent with surrounding land uses.

The schedule for construction of the Proposed Action elements (see Table 2-1) would be spaced such that all elements would not be constructed concurrently, thus minimizing the potential for concentrated levels of temporary construction impacts. Site clearing, preparation, and other construction activities would contribute to temporary environmental effects including air emissions, stormwater flows and soil erosion. Estimates of air emissions from the Proposed Action indicate temporary levels well below the *de minimus* threshold, and would not create any cumulatively substantial adverse effects on the environment. Implementation of BMPs would also minimize potential construction effects of soil erosion.

Specific information on cumulative impacts from all construction projects for all tenants is not currently available. Cumulative impacts from past, ongoing and future capital improvement projects at BAFB through 2009 are being addressed in a separate EA. A draft of this EA should be available in September 2009.

Regionally, current proposed or ongoing residential developments within approximately 0.5 mile of the BAFB would affect almost 1,000 acres of land (USAF 2003). Compared to the extent of regional development, the Proposed Action would not contribute significantly to cumulative environmental impacts.

BAFB is currently conducting a separate EA that addresses the cumulative impacts of all construction projects for the base. The results of this analysis would be useful in determining cumulative impacts from this project in conjunction with planned construction.

## **4.17 Unavoidable Adverse Impacts**

No significant unavoidable adverse impacts are associated with the Proposed Action at BAFB.

## **4.18 Irreversible and Irretrievable Commitment Of Resources**

NEPA requires that environmental analyses include identification of "...any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented." Construction of proposed projects would require the consumption of limited amounts of materials typically associated with construction activities. An undetermined amount of energy to conduct demolition, construction, and operation of these facilities would be expended and irreversibly lost. Implementation of the Proposed Action would result in the removal of black-tailed prairie dogs, resulting in an irretrievable and/or irreversible impact by removing the prairie dogs and potential habitat for burrowing owls and other wildlife that may use prairie dog burrows at BAFB. All black-tailed prairie dog issues are addressed in the *Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices* (BAFB 2001).

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USEPA. See U.S. Environmental Protection Agency.

USFWS. U.S. Fish and Wildlife Service.

## 6.0 Acronyms

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140 WG	140th Wing
460 ABW	460th Air Base Wing
°F	degrees Fahrenheit
AAFES	Army and Air Force Exchange Services
ACM	asbestos containing material
AFB	Air Force Base
AFFF	aqueous fire fighting foam
AFI	Air Force Instruction
AFSPC	Air Force Space Command
AICUZ	Air Installation Compatibility Use Zone
ANG	Air National Guard
APCD	Colorado Air Pollution Control Division
APEN	Air Pollution Emission Notice
AQCR	Air Quality Control Region
ASA	air sovereignty alert
AST	aboveground storage tank
ATS	advanced tactical support
BAFB	Buckley Air Force Base
BANGB	Buckley Air National Guard Base
BASH	bird/aircraft strike hazard
BEA	Bureau of Economic Analysis
BMPs	best management practices
CAA	Clean Air Act
CCTV	closed-circuit television
CDLE	Colorado Department of Labor and Employment
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and the Environment
CE	Civil Engineering
CEQ	Council on Environmental Quality

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
COANG	Colorado Air National Guard
dB	decibel
DNL	day-night average sound level
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EECA	Engineering Evaluation and Cost Analysis
EIS	Environmental Impact Statement
EMIS	Environmental Management Information System
EPCRA	Emergency Planning and Community Right To Know Act
ERP	Environmental Restoration Program
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FY	fiscal year
HAPs	hazardous air pollutants
IAP	initial accumulation point
IDS	individual deployment system
IPM	Integrated Pest Management
LBP	lead-based paint
MACT	maximum achievable control technology
MOA	Memorandum of Agreement
MSA	munitions storage areas
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service

NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PCBs	polychlorinated biphenyls
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to 10 microns
POL	petroleum, oil, and lubricants
POV	privately owned vehicles
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SSLAR	Simplified Short Approach Lighting System with Runway Alignment Indicator Lights
tpy	tons per year
TSCA	Toxic Substance Control Act
TSD	treatment, storage, and disposal
TSP	total suspended particulates
U.S.	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USCB	U.S. Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound



## 7.0 List of Preparers

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Table 7-1 lists the preparers of this EA, their degrees, and their years of experience.

**TABLE 7-1**  
List of Preparers

Name	Degree(s)	Years of Experience
Tom Haislip	M.S., Ecology	30
Jessie Gourlie	M.S., Environmental Science	24
James Nall	M.S., Environmental Science	20

Appendix A

**Air Force Form 813**

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS:
<b>INSTRUCTIONS:</b> Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).		
<b>SECTION I - PROPONENT INFORMATION</b>		
<b>1. TO (Environmental Planning Function)</b> 460 CES/CEV	<b>2. FROM (Proponent organization and functional address symbol)</b> 140 CES/CEV	<b>2a. TELEPHONE NO.</b> 303-677-9100
<b>3. TITLE OF PROPOSED ACTION</b> Proposed Construction Projects for the 140 <sup>th</sup> Wing, Colorado Air National Guard at Buckley Air Force Base		
<b>4. PURPOSE AND NEED FOR ACTION</b> (Identify decision to be made and need date). The purpose of the action is to construct new facilities to meet the assigned mission of the 140 <sup>th</sup> WG and BAFB.		
<b>5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOFPA)</b> (Provide sufficient details for evaluation of the total action). Modification, construction, relocation, demolition, and operation of the following facility elements on the base to accommodate the mission assigned to the 140 WG and BAFB: Civil Engineering (CE) Complex; Alert Shelters and Alert Crew Quarters; High-Speed Taxiway and Warm-Up/Holding Pad; Fire Training Crash Rescue Facility; Weapons Load Training Complex; Weapons Release Complex; East Parking Apron; and, Approach Lighting for Runway 14		
<b>6. PROPONENT APPROVAL (Name and Grade)</b> Verdeda R. Hawkins, Civ	<b>6a. SIGNATURE</b> <i>Verdeda R. Hawkins</i>	<b>6b. DATE</b> 6 May 04
<b>SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.</b> (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect).		
<b>7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE</b> (Noise, accident potential, encroachment, etc.)	+	0
<b>8. AIR QUALITY</b> (emissions, attainment status, state implementation plan, etc.) <i>Minor increase in fugitive dust during construction</i>	X	-
<b>9. WATER RESOURCES</b> (Quality, quantity, source, etc.) <i>Minor increase in sedimentation</i>	X	-
<b>10. SAFETY AND OCCUPATIONAL HEALTH</b> (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)	X	-
<b>11. HAZARDOUS MATERIALS/ASTE</b> (Use/storage/generation, solid waste, etc.)	X	-
<b>12. BIOLOGICAL RESOURCES</b> (Wetlands/woodlands, flora, fauna, etc.)	X	-
<b>13. CULTURAL RESOURCES</b> (Native American burial sites, archeological, historical, etc.)	X	-
<b>14. GEOLOGY AND SOILS</b> (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)	X	-
<b>15. SOCIOECONOMIC</b> (Employment/population projections, school and local fiscal impacts, etc.)	X	-
<b>16. OTHER</b> (Potential impacts not addressed above) <i>Cumulative impacts will be addressed in EIS</i>	X	U
<b>SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION</b>		
<b>17.</b> <input checked="" type="checkbox"/>	<b>PROPOSED ACTION QUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____ OR</b> <b>PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.</b>	
<b>18. REMARKS</b>		
<b>19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION</b> (Name and Grade) <i>E. J. Thomas, GS-12</i>		
<b>19a. SIGNATURE</b> <i>E. J. Thomas</i>		<b>19b. DATE</b> 5/6/04

<b>Proposed Action</b>	Repair Sink in front of Main Doors by removing damaged asphalt and poor subgrade material, replace subgrade material with stable material, repave and reseal area.
<b>Alternative 1</b>	Repair Sink in front of Main Doors by filling in the sink hole with asphalt overlay (patch) material.
<b>No Action Alternative</b>	No action would continue the existing FOD issues. Safety concerns with possible ice during the winter months while pushing engines and aircraft in and out of the building would also continue.
<b>Proposed Action</b>	Repair existing mudhole by water spigot by regrading area, level a 3ft x 3ft area and install a 4 to 6 inch thick concrete slab.
<b>Alternative 1</b>	Repair existing mudhole by water spigot by regrading area, level the area, and cover 3ft x 3ft area with 3"- diameter stone
<b>No Action Alternative</b>	No action would continue the FOD and potential erosion issues in the area.
<b>Proposed Action</b>	Install new paved driveway for fuel trucks around the south side of Hush House to taxiway by grading out and leveling area, install stable base material, pave new driveway
<b>Alternative 1</b>	Install new paved driveway for fuel trucks around Hush House to Hush House Driveway by grading out and leveling area, install stable base material, pave new driveway
<b>No Action Alternative</b>	No action would result in continuing safety problems while backing up the fuel trucks in this area and not relieve the existing congestion.
<b>Proposed Action</b>	Removing the large "mudhole" from in front of the large doors and by the Northwest corner of the Hush House by grading out area to drain, install stable base material, and asphalt pave area
<b>Alternative 1</b>	Removing the large "mudhole" from in front of the large doors and by the Northwest corner of the Hush House by grading out area to drain, install stable base material, and install 3-inch crushed stone.
<b>No Action Alternative</b>	No action would continue the FOD issues raised every time this area is rained or snowed on.
<b>Proposed Action</b>	Construction of a new Storage Shed would be done by removing the old structure, grading out and leveling the area, constructing a foundation, build the new shed and seal it at ground level.
<b>Alternative 1</b>	Inspect the existing shed, outline repairs needed, and repair existing the shed.
<b>No Action Alternative</b>	No action would continue the existing animal control issues in the building (rabbits, snakes, mice, etc) due to it not being sealed at the ground. The lack of lockable doors would also continue a potential security issue.

Appendix B

## **IICEP Correspondence**

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May 14, 2004

ANG/CEVP  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157

[Addressee from Distribution List (attached)]

To Whom It May Concern,

The Air National Guard has prepared an Environmental Assessment (EA) for Proposed Construction and Demolition Projects the 140<sup>th</sup> Wing, Colorado Air National Guard at Buckley Air Force Base, Arapahoe County, Colorado. The analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental or socioeconomic impacts. A copy of the Finding of No Significant Impact (FONSI) is included with this correspondence as Attachment 1.

The environmental impact analysis process for this proposal was conducted by the Air National Guard in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached EA and FONSI. Please provide any comments you may have within 30 days to the point of contact on the EA cover sheet. We have attached a listing of those Federal and state agencies that have been contacted (see Attachment 2).

Lt. Colonel Tammy Jo Mitnik  
ANG/CEVP  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157

<b>Name</b>	<b>Affiliation/Title</b>	<b>Address</b>	<b>City/ State</b>	<b>Zip Code</b>
Mr. David Rathke	EPA—Region VIII	999 18 <sup>th</sup> Street, Suite 500	Denver, CO	80202
Mr. Larry Svoboda	EPA—Region VIII, NEPA Unit Chief	999 18 <sup>th</sup> Street, Suite 500	Denver, CO	80202
Ms. Judith Mc Culley	EPA—Region VIII, Office of Ecosystem Protection and Remediation	999 18 <sup>th</sup> Street, Suite 500	Denver, CO	80202
Ms. Susan Linner	U.S. Fish and Wildlife Service, State Supervisor	755 Parfet Street, Suite 361	Lakewood, CO	80215
Ms. Eliza Moore	Colorado Division of Wildlife, Wildlife Manager	6060 South Broadway	Denver, CO	80216
Ms. Georgianna Contiguglia	Colorado Historical Society, Colorado History Museum, State Historic Preservation Officer	1300 Broadway	Denver, CO	80203
Mr. Brad Beckman	CDOT, Manager of Environmental Planning	4201 East Arkansas Avenue	Denver, CO	80222
Mr. Curtis Burns	CDPHE	4300 Cherry Creek Dr. South	Denver, CO	80246
Ms. Laura Bishard	CDPHE	4300 Cherry Creek Dr. South	Denver, CO	80246
Mr. Ed LaRock	CDPHE/HMWWD	4300 Cherry Creek Dr. South	Denver, CO	80246
Ms. Denise Balkas	CDPHE, Director of Planning	4300 Cherry Creek Dr. South	Denver, CO	80246
Ms. Carol MacIennan	Tri-County Health Department	7000 East Belleview Avenue, Suite 301	Greenwood Village, CO	80111
Mr. Russell Clayshulte	Community Co-chair	1529 South Telluride Street	Aurora, CO	80017
Mr. Jim Ives	City of Aurora Planning Department, Environmental Division, C.E.P. Environmental Program Supervisor	1470 South Havana Street	Aurora, CO	80017
Mr. Mac Callison	City of Aurora, Planning Department, Traffic Division	1470 South Havana	Aurora, CO	80012
Ms. Margee Cannon	City of Aurora Neighborhood Services	1470 South Havana	Aurora, CO	80012
Ms. Monica Sheets	CD AGO	1525 Sherman Street	Denver, CO	80203
Honorable Kathy Green	Aurora City Council Ward II	1470 South Havana Street	Aurora, CO	80012

Planning Department  
15151 E. Alameda Parkway  
Aurora, Colorado 80012  
Phone: 303-739-7250  
Fax: 303-739-7268  
www.auroragov.org



June 7, 2004

Lt. Col. Mitnik  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157

Dear Lt. Col. Mitnik:

**Re: Comments on Preliminary Draft Environmental Assessment for Proposed Construction Projects for the 140<sup>th</sup> Wing, Colorado Air National Guard, May 2004**

Thank you for providing us the opportunity to comment on the subject document. We have the following comments for your consideration:

**General Comment:** The document contains much discussion on the affected environment and limited discussion on impacts, particularly the airfield and taxiway construction projects. These projects have the greatest potential for significant impacts.

**Page 3-3, Table 3-1 – Criteria Pollutant Emissions** – Line Item “EMIS Database Chemical Usage” – The emission estimate for HAPs (1.08 tpy) is greater than the emissions estimate for VOC (0.75 tpy). This is unusual and should be confirmed.

**Page 3-6, Line 6** – A four percent increase in population in one year is significant, particularly since much of the growth is occurring in the area surrounding Buckley. Suggest removing the word “slight” from the text. More recent population statistics are available.

**Page 3-12, Table 3-4 “BAFB Population”** – It is unlikely that the retiree population of 22,000 and the dependent and veteran population of 55,000 live or work on the base. Suggest changing the title of the table or removing these two line items.

**Page 3-19, line 2, Noise Section** – Suggest changing the word “above” to “below”.

**Page 3-19, line 11** – Suggest changing the phrase “less than” to “greater than”. Noise levels within the 65 dBA contour are greater than 65 dB.

**Page 3-19, lines 39-40** – Please clarify whether or not any facilities with septic tanks are affected by the preferred alternative.



**Page 3-20** – Suggest dividing “Safety” and “Pollution Prevention” into 2 separate sections since the topics are unrelated. The topic “Pollution Prevention” could be incorporated into the section on “Solid Waste” as has been done in previous Buckley EA’s.

**Page 3-20, Lines 21-26** – The discussion in this paragraph is more closely related to impacts of the P.A. or mitigation. Suggest moving most of the discussion to Section 4.

**Page 4-1, Air Quality, General Comments** – The discussion in this section is inadequate and does not accurately describe the emissions from the construction projects.

**Page 4-1, lines 17-18** – The statement that the maximum acreage disturbed during construction of any one element is 1 acre is incorrect. Using the numbers provided in the EA, taxiway construction would disturb a minimum of 20 acres and the apron construction would disturb at least 8 acres. Using the calculation methodology provided in the EA, and assuming only 6 months of construction for the taxiway (actual construction time would probably be longer), fugitive dust emissions would be 144 tons/year, which is significantly greater than the General Conformity de minimis threshold. Suggest using the CDPHE APCD fugitive dust emission spreadsheet for construction projects and describe in detail the proposed fugitive dust mitigation measures to be employed.

**Page 4-1, lines 31-32** - Detailed emission calculations for each of the major projects (taxiway, apron, etc.) should be provided. Construction of the taxiway and apron will require the importation of large amounts of concrete. Emissions from concrete batching, truck hauling, employee vehicles, paving equipment, and other necessary equipment should be included in the detailed calculations.

**Page 4-2, lines 5-6** – The fugitive dust control plan should also be submitted to the APCD as part of the land development permit application.

**Page 4-4, lines 7-9** – The discussion on floodplains and wetlands appears to be in the wrong section.

**General Comment, pages 4-7 to 4-9, Section 4.10** – The discussion on Solid and Hazardous Materials and Waste is excellent and provides what appears to be a complete and accurate assessment that the P.A. would not result in significant impacts to this issue area, even though several of the buildings and areas contain hazardous materials. The thoroughness of this section should be used as a model for the other impact sections.

**Page 4-10, lines 4-6** – The document should provide more detail on the “slight increase” in noise for residences west of the airfield, and explain why the 65 dB contour will not be affected.

**Page 4-12, Cumulative Impacts** – The Cumulative Impacts section is inadequate and does not accurately describe the impacts from the large number of proposed construction projects at Buckley. The statement “no other substantial construction projects are known to be proposed for BAFB” is inaccurate. The following EA’s have been circulated for review in the past 9 months:

- Antenna Construction

- Fire Training Area (Feb 2004)
- Recreational Equipment Facility (Feb. 2004)
- Base Housing
- BAFB Conversion to GSAB (Oct. 2003)
- Phase III Infrastructure Upgrade and Expansion (Oct. 2003)
- Proposed Construction II (March 2004)
- Hazardous Materials and Hazardous Waste Facility (March 2004)
- Construction at the Colorado Army NG Aviation Support Facility Complex (May 2004) – This document contains a list of 44 proposed projects to be completed by FY 2009.

Cumulative Impacts from each of these projects or groups of projects should be discussed in the EA. The Phase III Infrastructure Upgrade and Expansion project EA is listed in the reference section, but the impacts from this project are not discussed in the document.

**Page 4-12, lines 15-17** – As discussed under Air Quality, the impacts from the proposed construction projects are not “minimal” and the revised impacts should be included in this section.

**Page 4-12, lines 23-25** – As listed above, the Draft EA on the Proposed Construction II projects was circulated for comments in March 2004. The target completion date for the “Cumulative Impacts” EA should be provided if known.

Again, thank you for the opportunity to comment on the draft EA. Please feel free to contact Jim Ives, Environmental Program Supervisor at 303-739-7220 if you have any questions.

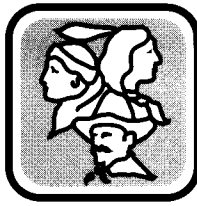
Sincerely,



Robert Watkins, A.I.C.P.  
Acting Planning Director

Rw/jv

C: Jim Ives, Environmental Program Supervisor



## COLORADO HISTORICAL SOCIETY

**The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137**

May 18, 2004

Jessie Gourlie  
CH2M Hill  
9193 South Jamaica Street  
Englewood, CO 80112

Re: Draft EA and FONSI for Proposed Construction Project for the 140<sup>th</sup> Wing, Colorado Air National Guard at Buckley Air Force Base, Colorado (CHS #43208)

Dear Ms. Gourlie,

Thank you for your correspondence dated May 12, 2004 and received by our office on May 17, 2004 regarding the above-mentioned project.

After review of the information, we would like to request additional information regarding the status of the Section 106 process within the larger NEPA study. In coordinating Section 106 and NEPA, the identification, evaluation and determination of effects should be done when the Draft EA is being completed. With this coordination practice in mind, it is our opinion that the following proposed action elements may have an affect on historic properties, as defined under Section 106:

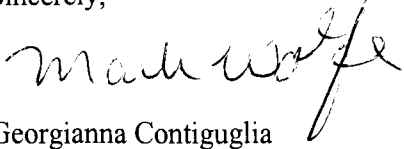
- Alert Shelters and alert crew quarters
- Fire training crash rescue facility (options A to C)
- Weapons release complex
- Weapons release complex
- East parking complex
- Approach lighting for runway 14

We requested in a March 10, 2004 correspondence with the Buckley Air Force Base that survey forms be completed on the runways and taxiways. Until these survey forms are received and evaluated for National Register eligibility, the above-listed proposed action elements may have the potential to affect the runways and taxiways under Section 106, if determined eligible for listing in the National Register.

The proposed action element of the construction of the alert shelters and alert crew quarters may have a potential to affect Buildings 801 and 909 and their historic setting, determined eligible for the National Register. In order to fully evaluate the potential effect; please submit a detailed site plan that shows the exact location of the new construction and details about the new construction, such as the number of stories.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678 or amy.pallante@chs.state.co.us.

Sincerely,

  
For Georgianna Contiguglia  
State Historic Preservation Officer

cc: Floyd Hatch/Buckley Air Force Base



## COLORADO HISTORICAL SOCIETY

The Colorado History Museum 1800 Broadway Denver, Colorado 80208-2137

May 21, 2004

Lt. Col. Christopher C. McLane  
460<sup>th</sup> Civil Engineer Squadron  
660 South Aspen Street, Stop 86  
Buckley AFB, CO 80011-9551

Re: May 19, 2004 Correspondence (CHS #42435)

Dear Lt. Col. McLane,

Thank you for your correspondence dated May 19, 2004 received by our office on that same date. After review of the survey forms, we concur with your determination of *not eligible* for the National Register of Historic Places (NRHP) for the following resources:

- 5AH.2345, 5AH.2346, 5AH.2347, 5AH.2352 / Airfield Taxiways
- 5AH.2343, 5AH.2344 / Airfield Runways
- 5AH.2348, 5AH.2349, 5AH.2350, 5AH.2351, 5AH.2353, 5AH.2354, 5AH.2355, 5AH.2356 / Airfield aprons, Overruns, and Shoulders

We also concur with your determination of *eligible* for the NRHP for the following resources:

- 5AH.2274/Building 801
- 5AH.2276/Building 909

After receipt of all needed information, we are able to complete our review and comment of the Draft Historic Landscape/Viewshed Evaluation Report. We concur with your findings regarding the Designed Landscape, Pre-Military/Ethnographic Landscape, and the World War II Landscape. However, we do not concur with your findings regarding the Cold War Airfield Landscape, as presented on page E-2 and Chapter 4 of the report. This section suggests that resource 5AH.2274/Building 801 and resource 5AH.2276/Building 909 are not eligible for listing in the National Register; however, survey forms completed by your staff recommend the resources as eligible for listing in the National Register. We concur with the findings presented in the survey forms. We also do not concur with your finding of not eligible for the National Register regarding the Cold War Radome Landscape, as presented on page E-2 and Chapter 4 of the report. However, after receipt of your May 19, 2004 letter, we understand that you now consider the radomes, resources 5AH.2332, 5AH.2288, 5AH.2289, and 5AH.2333, as eligible for listing in the National Register. We concur with the findings of eligibility for the radomes.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,



Georgianna Contiguglia  
State Historic Preservation Officer

cc: Mr. Floyd Hatch, Buckley AFB  
1Lt. Fontanetta, Buckley AFB



**DEPARTMENT OF THE AIR FORCE  
460TH AIR BASE WING (AFSPC)**

**JUL 20 2004**

Lt Col Christopher C. McLane  
Commander, 460th Civil Engineer Squadron  
660 South Aspen Street, Stop 86  
Buckley AFB CO 80011-9551

Georgianna Contiguglia  
State Historic Preservation Officer  
Colorado History Museum  
1300 Broadway  
Denver CO 80203-2137

Dear Ms. Contiguglia

The Colorado Air National Guard plans to construct the following:

- Civil Engineering (CE) Complex
- Alert Shelters and Alert Crew Quarters
- High-Speed Taxiway and Warm-Up/Holding Pad
- Fire Training Crash Rescue Facility
- Weapons Load Training Complex
- Weapons Release Complex
- East Parking Apron
- Approach Lighting for Runway 14

The information on these construction projects is contained in the draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for construction and operation of multiple facilities at Buckley Air Force Base (AFB), Colorado that were previously forwarded to you via a transmittal letter dated 14 May 2004 by the Guard Bureau (ANG/CEVP, Andrews AFB, MD). A drawing showing the Alert Shelters and Crew Quarters is attached.

The Base Hangers 801 (5AH.2274) and 909 (5AH.2276), which are considered potentially eligible for listing on the National Register of Historic Places, would not be impacted by the proposed construction projects, as construction would not occur near these buildings or create an inconsistent landscape after project completion (i.e., the area already has an industrial characteristic). In addition, there are no known archaeological resources. Therefore, in compliance with Section 106 of the National Historic Preservation Act, Buckley AFB has determined that these construction projects would not have an adverse affect on historic or prehistoric properties.

If you have any questions please contact Captain Anthony Fontanetta, Acting Environmental Planning Chief at 720-847-9187, email [anthony.fontanetta@buckley.af.mil](mailto:anthony.fontanetta@buckley.af.mil) or Mr. Floyd Hatch at 720-847-6937, email [floyd.hatch@buckley.af.mil](mailto:floyd.hatch@buckley.af.mil).

Sincerely

A handwritten signature in black ink, appearing to read 'C. McLane', written in a cursive style.

CHRISTOPHER C. McLANE, Lt Col, USAF  
Base Civil Engineer







**COLORADO  
HISTORICAL  
SOCIETY**

**The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137**

July 22, 2004

Lt. Col. Christopher C. McLane  
460<sup>th</sup> Civil Engineer Squadron  
660 South Aspen Street, Stop 86  
Buckley AFB, CO 80011-9551

Re: Construction and Operation of Multiple Facilities at Buckley Air Force Base (CHS #43649)

Dear Lt. Col. McLane,

Thank you for your correspondence dated July 20, 2004 and received by our office on July 20, 2004 regarding the above-mentioned project.

After review of the submitted information, we concur with your determination of *no adverse effect* under Section 106 of the National Historic Preservation Act (36 CFR 800.5(b)) regarding the proposed action. If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

for Georgianna Contiguglia  
State Historic Preservation Officer

cc: Mr. Floyd Hatch, Buckley AFB  
1Lt. Fontanetta, Buckley AFB

From: ED J LAROCK [mailto:[ed.larock@state.co.us](mailto:ed.larock@state.co.us)]  
Sent: Wednesday, June 16, 2004 5:57 PM  
To: [tammy.mitnik@ang.af.mil](mailto:tammy.mitnik@ang.af.mil)  
Cc: [Janet.Wade@BUCKLEY.AF.MIL](mailto:Janet.Wade@BUCKLEY.AF.MIL); [Mark.Spangler@BUCKLEY.AF.MIL](mailto:Mark.Spangler@BUCKLEY.AF.MIL);  
[rathke.david@epamail.epa.gov](mailto:rathke.david@epamail.epa.gov); CURTIS L Burns; JEFF Edson; Monica  
Sheets  
Subject: EA for proposed construction at BAFB review

Dear Lt. Col. Mitnik,

The Colorado Department of Public Health and Environment (CDPHE) has reviewed the Draft Environmental Assessment for Proposed Construction Projects for the 140th Wing, Colorado Air National Guard, Buckley Air Force Base (BAFB), Colorado dated May 2004 and received May 17, 2004.

CDPHE has the following comments:

Section 3.10.3 - The Air Force ERP program is conducting a basewide preliminary assessment which may identify other environmental concerns not previously identified at the base, potentially in areas proposed for construction. While Underground Storage Tanks and soil have been removed from ERP Site 9, the Air Force and the regulatory agencies have not yet determined if any additional remedial actions will be required for this site. It is still an open ERP site.

Section 4.10.1.3 - The section mistakenly identifies ERP Site 9 as a closed site in the vicinity of the weapons release complex. The closed site is ERP Site 6 as described in Section 3.10.3. ERP site 9 remains open as noted above and is in the vicinity of the proposed CE complex.

Section 4.10.1.4 - The cited BAFB Asbestos Containing Material in Soils Management Plan will require considerable revision according to the CDPHE review. Any asbestos materials found during building demolition or construction activities will be managed and abated according to a plan approved by CDPHE.

Thank you for the opportunity to comment. Please contact me with any questions.

Ed LaRock  
Hazardous Materials and Waste Management Division  
Colorado Dept. of Public Health and Environment  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530  
303-692-3324  
Fax 303-759-5355  
[ed.larock@state.co.us](mailto:ed.larock@state.co.us)



DEPARTMENT OF THE AIR FORCE  
AIR NATIONAL GUARD

10 9 JUL 04

Mr. Ed LaRock, P.G.  
Colorado Department of Public Health and Environment  
HMWMD-B2  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530

Air National Guard Environmental Division  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157

Subject: Comments on Draft Environmental Assessment for Proposed Construction Projects for the 140th Wing, Colorado Air National Guard, May 2004

Dear Mr. LaRock:

Thank you for your comments regarding the Draft Environmental Assessment for Proposed Construction Projects for the 140th Wing, Colorado Air National Guard dated May 2004. We have reviewed your comments and will modify the EA as appropriate. Our responses follow.

**Response to Comments:**

**Section 3.10.3.** The text will be modified to identify that conclusions from ongoing assessment for ERP Site 9 are currently not known.

**Section 4.10.1.3.** Text will be modified to indicate that ERP Site 9 is not closed, and that remedial actions have included removal of underground storage tanks and soils. It is not expected that construction of the CE complex will be affected by ERP Site 9, as it is not located within the construction footprint for the CE complex. However, if ongoing assessments reveal possible concerns within areas proposed for construction, they will be addressed.

**Section 4.10.1.4.** The text will be modified to indicate that any asbestos materials found during building demolition or construction activities will be managed and abated according to the Asbestos Containing Material in Soils Management Plan as approved by CDPHE.

Again, thank you for your comments. They have helped make this a better EA.

Sincerely,

DAVID C. VAN GASBECK  
Chief, Environmental Division

The signature of David C. Van Gasbeck is written in black ink. It is a stylized, cursive signature that flows from left to right, ending in a large, sweeping loop. Below the signature, the name "DAVID C. VAN GASBECK" and the title "Chief, Environmental Division" are printed in a standard, sans-serif font.



**DEPARTMENT OF THE AIR FORCE  
AIR NATIONAL GUARD**

**09 JUL 04**

Mr. Robert Watkins, Acting Planning Director  
15151 East Alameda Parkway  
Aurora, CO 80012

Air National Guard Environmental Division  
3500 Fetchet Avenue  
Andrews AFB, MD 20762-5157

Subject: Comments on Draft Environmental Assessment for Proposed Construction  
Projects for the 140th Wing, Colorado Air National Guard, May 2004

Dear Mr. Watkins:

Thank you for your comments regarding the Draft Environmental Assessment for Proposed Construction Projects for the 140th Wing, Colorado Air National Guard dated May 2004. We have reviewed your comments, and will modify the EA as appropriate. Our responses follow.

Response to Comments:

General Comment. We have added additional discussion of potential impacts from the construction projects, and air impacts in particular.

Page 3-3, Table 3-1. The values in the table were confirmed with Buckley Air Force Base (BAFB) Air Force personnel.

Page 3-6, Line 6. Comment incorporated.

Page 3-12, Table 3-4, BAFB Population. Comment incorporated.

Page 3-19, line 2, Noise Section. Comment incorporated.

Page 3-19, line 11. Comment incorporated.

Page 3-19, lines 39-40. The preferred alternative will not affect existing septic tanks on BAFB.

Page 3-20. Comment incorporated.

Page 3-20, Lines 21-26. Comment incorporated.

Page 4-1. Additional discussion has been added relative to air emissions generated by the construction projects.

Page 4-1, lines 17-18. Emissions from each of the construction projects have been calculated, and provided in table format. The conservative emission factor of 1.2 tons of dust generated

per active acre per month was used. It was then assumed that about half the total acreage for each project element would be exposed at one time, and that dust suppression practices would minimize emissions, thus reducing potential emissions. Based on this analysis, fugitive dust emissions from the Proposed Action would be well below the annual *de minimus* threshold of 100 tpy.

Page 4-1, lines 31-32. Specific information on emissions from construction equipment, vehicle trips, etc. is unavailable since contractors have not been selected for these projects. However, worst-case construction emissions were estimated for the largest project (high speed taxiway and warm up/holding pad) and provided in table format.

Page 4-2, lines 5-6. Comment incorporated.

Page 4-4, lines 7-9. The discussion on floodplains and wetlands is in the correct section, and corresponds to Section 3.4.

Page 4-10, lines 4-6. The term "slight increase" has been removed. There will be no increase in noise impacts from the taxiway or warm up pad. Additional discussion on noise impacts has been added.

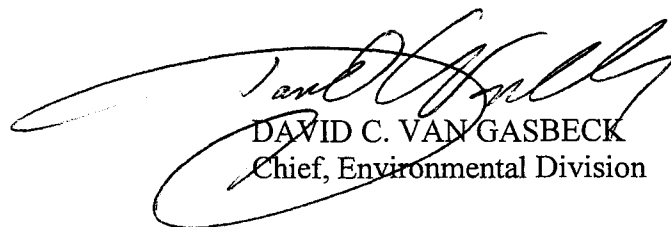
Page 4-12, Cumulative Impacts. The statement "no other substantial construction projects are known to be proposed for BAFB" has been removed. Information on cumulative impacts from all capital improvement projects on BAFB is not currently available, and we are unable to include such an analysis in this EA. However, we understand that type of analysis should be provided in an EA that will address cumulative impacts from all capital improvements through FY 09. A draft of that EA should be available in September 2004.

Page 4-12, lines 15-17. A discussion of air quality impacts from the proposed construction projects has been added.

Page 4-12, lines 23-25. The target completion date for the draft EA that will address cumulative impacts from all capital improvements on BAFB through FY 09 is September 2004.

Again, thank you for your comments. They have helped make this a better EA.

Sincerely,



DAVID C. VAN GASBECK  
Chief, Environmental Division



DEPARTMENT OF THE AIR FORCE  
460TH AIR BASE WING (AFSPC)

30 July 2004

MEMORANDUM FOR 460 ABW/CC

FROM: 460 ABW/JA

SUBJECT: Legal Review – Proposed Construction Projects for the 140th Wing,  
Colorado Air National Guard (COANG)

1. SYNOPSIS. The attached Environmental Assessment (EA) covers eight separate COANG projects with anticipated construction dates between FY04 and FY13. I have reviewed the EA and find it legally sufficient for the three projects anticipated for FY04 and FY06.
2. FACTS. The proposed actions include a CE Complex, Alert Shelters and Alert Crew Quarters, High-Speed Taxiway and Warm-Up/Holding Pad, Fire Training/Crash Rescue Facility, Weapons Load Training Complex, Weapons Release Complex, East Parking Apron, and Approach Lighting for Runway 14. These projects would commence at various times between FY04 and FY13. Construction activity would have short-term impacts on air quality, but would remain within the limits of our Title V Operating Permit. The projects would adhere to the 2001 Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley Air Force Base. Construction practices will prevent significant impacts on geology, soils, topography, and water resources. The projects would not involve significant impacts on land use, transportation, or wetlands. The State of Colorado Department of Public Health and Environment, the Colorado Historical Society, and the City of Aurora submitted comments. The comments and responses are in the EA.
3. LAW. Federal agencies are required to analyze and document the environmental impact of proposed federal actions to achieve and maintain compliance with the National Environmental Policy Act of 1969 (NEPA) and Air Force implementing regulations.<sup>1</sup> A proponent that initiates an Air Force action is responsible for ... identifying key decision points ... to ensure environmental documents are available to the decision-maker before the final decision is made...<sup>2</sup> The environmental record needs to have information regarding existing or potential environmental problems as appropriate for review by all levels of decision makers.<sup>3</sup>

<sup>1</sup> 32 CFR 939.1, Environmental Impact Analysis Process.

<sup>2</sup> 32 CFR 939.3.

<sup>3</sup> National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321.

**ATTORNEY WORK PRODUCT AND ATTORNEY-CLIENT PRIVILEGE:** This document contains attorney work-product or information protected under the attorney-client privilege. Do not release outside of DOD channels without prior authorization from the sender.

#### 4. DISCUSSION.

a. This EA has appropriately collected facts and relevant analysis. I agree with its finding that there is no significant environmental impact from any of the alternatives reviewed, at least with respect to the three projects scheduled for FY04 and FY06.<sup>4</sup> While this EA meets legal minimums, the treatment of alternatives and cumulative impacts, along with the timing of the assessment, should be improved in future EAs. I find no significant adverse impact upon wetlands, historically significant areas, environmental restoration sites, or endangered species or their habitat. The CE Complex and Alert Shelters will be located in areas with similar land uses, and much of these facilities will be on land that has existing structures in place. The Approach Lighting will affect previously undisturbed land in the approach/departure corridor, but the disturbance will be minor and this project is necessary for flight safety. I find nothing likely to cause substantial public controversy or litigation that would drive the requirement to report such possibilities to HQ USAF/JACE.

b. The City of Aurora's comment that fugitive dust emissions would be much higher than calculated in the EA was addressed in the Air National Guard's 9 Jul 04 response. Based on the City of Aurora's comments, the EA was modified to better address the potential for increased noise in residential areas west of the base. The EA now clearly states that operations on the Warm-Up/Holding Pad will not affect Buckley's noise contours. The City of Aurora's comment that our "Cumulative Impacts" section is inadequate has been responded to. The comments of the Colorado Historical Society regarding the eligibility of Buildings 801 and 909 for listing on the National Register of Historic Places were addressed in the 460 CES Commander's reply dated 20 Jul 04. The proposed construction will not impact these buildings, and there are no known archaeological resources. On 20 Jul 04, 460 CES/CC requested consultation with the US Fish and Wildlife Service regarding these projects under Section 7 of the Endangered Species Act. This request stated our opinion that these projects are not likely to adversely affect federally listed and candidate species. Finally, the CDPHE comments regarding our Environmental Restoration Program sites were addressed in a response dated 10 Jul 04. All comments have been adequately addressed (see responses at tab 3), which, along with the inclusion of the comments in the file, is all that is required by law.<sup>5</sup>

c. This EA has a scant discussion of alternatives to the eight projects. While it presents the "No Action" alternative, options are only analyzed for the Fire Training/Crash Rescue Facility. It briefly identifies alternatives for the other projects,

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<sup>4</sup> See EA, Section 4.0 generally.

<sup>5</sup> NEPA allows comment by the public and other agencies but does not require their consent before a decision is made.



but dismisses them because of certain disadvantages. Alternatives to the CE complex are dismissed because of "reduced efficiency of the 140 WG to provide operations and maintenance support for base facilities." Alternatives to the Alert Shelters are dismissed because "the selected option has the attributes of the shortest utility run, the least amount of required security fence, and closest distance to the aircraft." The alternative to the Weapons Release Complex was dismissed because it "would be more costly." This approach short-circuits the NEPA process. The purpose of NEPA is to be sure that you, as the decision maker, can weigh environmental impacts against mission needs. This cursory review of the alternatives usurps your role as the decision authority. This office has noted a trend among EAs to ignore the requirement for alternatives. Doing so raises the risk that an environmental group could convince a court to halt construction projects on Buckley AFB. This EA meets legal minimums, but you should reverse this trend.

d. This EA highlights the fact that a separate EA will address cumulative impacts of all construction projects on base. It incorrectly states this separate EA will be completed in Sep 09, rather than Sep 04. More significantly, it implies that you should wait until you have the information from that separate EA before reaching a decision on these projects. Despite this unfortunate wording, you have enough information about planned construction from other sources to act upon this EA.

e. This EA addresses projects that will take place over the next nine years. While there is no legal limit on how far an EA can look into the future, in my opinion nine years is too much. The practice at Buckley AFB has been not to complete an EA more than 2 years prior to the project. I recommend you limit the FONSI to the first three projects, namely the CE Complex, Alert Shelters, and Approach Lighting. These projects will begin by FY06. As the other projects draw near, a future commander can decide whether to rely on the existing EA, require a supplement, or to reaccomplish it.

5. RECOMMENDATION. That you review the EA and sign the revised version of the Finding of No Significant Impact statement, which shows you find no significant environmental impact from three of the proposed actions. My POC is Maj Chris Colclasure, 7-6323.



JEFFREY S. PALMER, Lt Col, USAF  
Staff Judge Advocate



THE Denver Newspaper Agency  
DENVER, CO

PUBLISHER'S AFFIDAVIT

City and County of Denver,  
STATE OF COLORADO, SS.

Diane Trujillo

..... being of lawful  
age and being first duly sworn upon oath, deposes and says:

Legal Advertising Reviewer

That he/she is the .....  
Of The Denver Newspaper Agency, publisher of the Denver Post and  
Rocky Mountain News, daily newspapers of general Circulation published  
and printed in whole or in part in Denver, in the County of Denver and  
State of Colorado, and that said newspaper was Prior to and during  
all the time hereinafter mentioned duly qualified For the publication of  
legal notices and advertisements within the Meaning of an Act of the  
General Assembly of the State of Colorado,  
Approved April 7, 1921, as amended and approved March 30, 1923;  
And as amended and approved March 5, 1935, entitled "An Act  
Concerning Legal Notices, Advertisements and Publications and the  
Fees of printers and publishers thereof, and to repeal all acts and parts  
Of acts in conflict with the provision of this Act" and amendments  
thereto;

That the notice, of which the annexed is a true copy, was published in  
the said newspaper to wit: (dates of publication)

May 14, 2004

Diane Trujillo  
Signature

Subscribed and sworn to before me this 14 day

of MAY A.D. 2004.

Sharon Sloan  
Notary Public.

My commission expires 8/15/06



Public Notice  
Colorado Air National Guard  
Notice of Availability

Draft Environmental Assessment (EA) and Draft Finding  
of No Significant Impact (FONSI) for proposed construction  
projects for the 140th Wing (WG) Colorado Air National  
Guard, Buckley Air Force Base (AFB). This EA has  
been prepared to evaluate the potential environmental  
impacts from the proposed modification, construction, re-  
location, demolition, and operation of the following select  
structures on Buckley AFB: Civil Engineering (CE) Complex;  
Alert Shelters and Alert Crew Quarters; High-Speed  
Taxiway and Warm-Up/Holding Pad; Fire Training Crash  
Rescue Facility; Weapons Load Training Complex; Weapons  
Release Complex; East Parking Apron; and Approach  
Lighting for Runway 14 (Proposed Action). The EA has  
been prepared per the National Environmental Policy Act  
to analyze the potential environmental consequences of  
the Proposed Action. The Proposed Action is required for  
the successful completion of the alert mission for Buckley  
Air Force Base.

Comments must be received by June 12, 2004.

Copies of the respective EA and FONSI may be found at the  
following public libraries: Aurora Public Library, Government  
Document Section, 14949 East Alameda Drive, Aurora,  
CO 80012, 303-738-6600 or Denver Public Library,  
Government Document Section, 11 West Fourteenth Ave.,  
Denver, CO 80202, 303-644-4200.

Interested parties should address their comments, ques-  
tions, or concerns to: J. Gounie/OWM HILL, 9193 South  
Jamaica Street, Englewood, CO 80112.